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A Symposium on Failures With Projective Techniques

In the belief that the time has come for calling the roll and taking stock of what our projective methods can do and what they cannot do, a meeting of the New York Chapter of the Society for Projective Techniques and Rorschach Institute was arranged, dedicated to that purpose, on January 15, 1952. Dr. Molly Harrower presented the clinical aspects of failures and limitations; Dr. Joseph Zubin offered a discussion of experimental-statistical evidence of failures; Dr. Leopold Bellak discussed some theoretical shortcomings and possible remedies.

Lest anyone be confused: all three participants are deeply convinced of the great value of projective methods, and believe that their value far exceeds their limitations, and far outranges any other device of personality appraisal. Studying one's own limitations may be a first step to increasing one's efficiency within the boundaries or even helping to overcome the obstacles.

Also, it must be remembered, particularly in connection with Dr. Zubin's presentation that empirical and experimental progress work hand in hand and often alternatingly. Often procedure has been long established as useful empirically before experimental science can prove the validity of the method and supply a consistent hypothesis. Thus, the clinical approach is often ahead of the academic one. On the other hand, theoretical, experimental formulations are often a necessary corrective of clinical practice. By formulating broader hypotheses, clinically founded procedures are not only validated, but often new horizons are opened for clinical applications.

LEOPOLD BELLAK, *President*
N. Y. Society for Projective Techniques

A Study of Limitations and "Failures": Toward An Ego Psychology of Projective Techniques

LEOPOLD BELLAK, M.D.

The postwar years were pervaded by a honeymoon spirit for clinical psychology in general, and projective techniques in particular. The personnel needs of the armed forces constituted a tremendous task and challenge. Young men with little training had to become experts in clinical psychology in weeks, and older ones with experience and training in laboratory and academic chairs became clinical specialists. The same pressure of circumstances produced ever new projective techniques and led to their acceptance as gospel when even the "oldest" were hardly validated and only poorly understood. This state of affairs parallels the development of intelligence testing during World War I. As then, so now the postwar pioneering should be devoted to careful scrutiny, to investigations of the tools themselves. And indeed, as one surveys the literature, one sees fewer new tests appear and increasing effort is being directed to validation and testing and discarding of hypotheses. The large number of papers concerned with the nature of the color response in the Rorschach (24) (27) (34) (35) are some examples; Lindzey's review of the TAT (25), Melt-

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zoff's study of the sentence completion (26), and Weisskopf's study on faking (38) are others.

The demands of validity and usefulness of projective techniques can be seen as two-fold; projective methods are expected to perform as tools of both nomothetic and idiographic sciences.[1] Formulated by Windleband (41), and elaborated upon notably by Allport (2), nomothetic science is concerned with general lawfulness—e.g., in physics, chemistry, etc. Idiographic science is concerned with understanding one particular event, e.g., of a historical nature (what led to the unique event of the storming of the Bastille). The main efforts in American psychology are being made on the side of making projective methods tools of nomothetic science: the Basic Rorschach Score (9), the development of signs (20) (30), the work with group Rorschachs (16) (28) bear testimony to that trend. The goal – extremely valuable in part, and in part carried over from the brass-instrument laboratory concepts of the "average" person, and from statistically oriented psychometrics—is to arrive at criteria which are applicable to groups of people or to syndromes. When these signs are encountered, they are to help one to assign a given person to a given group: Mr. Jones perceives in such a way that he must be considered a schizophrenic, or a criminal, or an engineer. Idiographically speaking, one would be satisfied to describe Mr. Jones as a unique specimen who perceives configurations in a certain way and tends to control his impulses under given circumstances, generally constituting a uniqueness of functioning which will not be exactly duplicated by any other individual.

Some projective methods doubtlessly lend themselves more to the nomothetic approach than others. Perhaps the generalisation can be made that the expressive methods and those scoring schemes primarily predicated upon formal characteristics lend themselves more to valid generalisations than those concerned primarily with content. Surely, the Rorschach is relatively easier to harness in lawfulness than the TAT (which is probably the most idiographic of all instruments). From a clinical standpoint, in fact, one might choose testing procedures according to whether one wants nomothetic or idiographic information.[2] The nomothetic approach, to be sure, is extremely valuable and necessary. The failures and limitations of projective methods as nomothetic instruments are the main impetus for further research and attempts at better conceptualization. Often the problem is discussed as the difficulty to make inference from the latent (test data) to the manifest (behavioral) level. Naturally, if one wants to know if a patient is suicidal, or of criminal inclination, he would like the psychologist to be able to tell him whether the signs and dynamics of suicide or criminality in the projective data imply that the destructive impulse will be acted on or not. Similarly, the personnel executive will want to know if somebody will make a good officer in reality, not in fantasy.

However, it is quite possible for a technique to fail us idiographi-

[1] It may not really be useful to speak of idiographic and nomothetic "science." Instead, it may be more helpful to speak of a primarily idiographic or primarily nomothetic "viewpoint" concerning a series of events.

[2] "Diagnosis" meaning either identification of a person with a given nosological group, or a statement concerning the unique constellation of forces in a given individual.

cally. Studying records – primarily TAT's – of patients known in three years of classical psychoanalysis, it was revealed that while in many ways extremely valuable and accurate, the tests failed to illuminate certain areas of personality at all, or displaced emphasis. Thus, while nomothetic performance can best be checked statistically, idiographic ones can probably best be investigated by a study of records against data from a prolonged psychoanalysis, the most idiographic of all studies.

The failures and limitations of projective techniques have often been related to a lack of a consistent conceptualization (1) (10) (33). When Frank (12) coined the term "projective methods", it was certainly the most ingenious then available, but rapidly proved itself misleading. Taken from Freud, projection was generally formulated in American psychology (19) as being a defense mechanism in the service of the ego, designed to avoid awareness of unacceptable wishes, thoughts, and impulses, accomplishing its task by ascribing such undesirable *subjective* phenomena to the *objective* world. This meaning of projection was primarily taken from Freud's discussion of paranoia in the case of Schreber (14). Only belatedly did some (3) (4) become aware that Freud (15) himself saw projection in a much broader sense as a general perceptual process, whereby *all contemporary meaningful perception is predicated upon and organized by the memory traces of all previous perceptions.* This broader concept, formulated by Bellak (1) as *apperceptive distortion,* might possibly serve as a more useful frame of reference for some of the so-called projective methods. But, perusal of any of the anthologies will show that there are techniques included under this term which could barely fit: graphology, the Bender Gestalt test, the Szondi, the Mira, figure drawing, and even the Rorschach in its non-content aspects are not primarily predicated upon apperception.

An attempt at a breakdown of the processes involved in all the tests currently considered "projective" led to five categories of study (8): 1) content, 2) expressive data, 3) Gestalt formation, 4) body image, and 5) a study of choices.

1. Methods based upon the study of the *content:* here we are concerned with *what* the patient says; the TAT and MAPS tests are the best examples. To a certain extent, the Rorschach inquiry and finger painting also belonging here.
2. Study of *expressive, structural* aspects: the main inquiry is directed toward *how* the subject says or does something. Here we refer to techniques like the Mira, Mosaic, Rorschach, and graphology, which belong to the subsemantic levels of myoneural functioning insofar as these are valid procedures for the understanding of personality factors and structure.
3. *Gestalt functions,* as exemplified in the Bender-Gestalt, the Mosaic, and again in the Rorschach (W, S, d, dd, etc.). In the TAT this function enters only rarely to any extent, e.g., when the subject is unable to apperceive the picture as a total and when he leaves the stimulus altogether.
4. *Body-image* or *self-image.* Figure drawing is primarily predicated upon this approach. It enters into the Rorschach, for example, when the sub-

ject identifies with puppets, and in the TAT especially when the subject sees the hero as crippled (3BM), or the violin as broken and/or "dead" (1), or identifies with an athlete (17BM).

5. *Methods of Preference.* Outstandingly, the Szondi is based upon a system of selective choices as personality indicators. Color choice in finger painting, selection of figures in doll-play, as well as MAPS, etc. all come into this category.

It is apparent that all five organismic aspects enter into every one of the projective methods, though in varying degrees.

The problem is to find a consistent body of theory under which such five divergent aspects of psychologic functioning can be subsumed. All these variables—fantasy content as in the TAT; perceptual organization as in the Rorschach; ability to see Gestalten as in the Bender; self-perception and motor expression as in the figure drawing, the Mira test, or in graphology; and recognition and the making of choices as is involved in the Szondi —all these activities are functions of the ego and resultants of its interaction with drives.

The answer then — a broad enough roof to cover the house of Projective testing—lies in an ego psychological theory. Projective techniques, like early psychoanalysis, has been primarily steeped in Id psychology, a concern with drives and their expression. Psychoanalysis made its major step when it turned from being solely a psychology of the unconscious drives to a study of the interaction of these drives with the ego (13). Similarly, it is necessary, today, that projective testing make this step to fully understand our data and their limitations.

The Role of the Ego in Imaginative Production

For the task of studying the participation of the ego in imaginative productions, we need first a brief review of the psychoanalytic concept of the nature and functions of the ego, most succinctly formulated by Hartmann (18), and also recently discussed by Bellak, particularly from the standpoint of ego strength (5).

The ego:

1) organizes and controls motility and perception
2) serves as protective barrier against excessive external and internal stimuli (see no. 6)
3) tests reality and engages in trial action (Freud's concept of thinking) and sends out danger signals (anxiety)
4) has organizing and self-regulating functions which include mediating between ego and superego and the id on the one side, and reality and all the variables on the other side. This includes frustration tolerance, capacity for detour behavior, and all we subsume under defenses.
5) has some "autonomous functions" which include abilities, intelligence, and an unspecified number of inherited characteristics, possibly including ego strength.
6) has the capacity for *self-exclusion:* not only must the well-functioning ego be able to repress (i.e., exclude) disturbing id (and super ego) impulses for the sake of good organismic functioning (e.g., a driver must not be unduly distracted by a pretty girl, or unreasonably feel compelled to avoid a mudhole); it must

also be able to exclude some or nearly all of its own functions. Hartmann (17) and later, Kris (23) who described the ego's capacity for self-exclusion (one of the last discovered and most important functions) have pointed out that it is necessary that cognitive ego functions be excluded in order to be able to fall asleep. A person who is driven by undue anxiety of nocuous stimuli (Oedipal fears) to maintain his cognitive functions will keep tense muscles, hear the clock ticking, see the light flashing, feel the blanket pressing. Under certain circumstances, the withdrawal of the cognitive functions can be subjectively experienced (hypnagogue phenomena, especially Silberer's (36) functional phenomenon).

Our p r o j e c t i v e tests, their strength and limitations, now need exploration in the light of these ego functions. The amount of ego participation in various productions, and the type of ego function involved, differs from method to method and from case to case.

The ego participates in varying degrees in imaginative productions —in a way which suggests a continuum from minimal to maximal participation, in the following sequences: dream, hypnagogue phenomena, preconscious fantasy, daydream, free association, artistic productions, test behavior on projective techniques, problem solving.

The *dream:* little has been said in the literature about the role of the ego in the dream. One could consider Freud's description of the "dreamwork" (condensation, symbolization, displacement, and secondary elaboration) as defensive efforts of the ego (the theory of the ego was not yet developed when "The Interpretation of Dreams" was written). In my own analytic experience, I have found that there are other aspects of ego participation in dreams. Some patients may tell a number of dreams of one night, or four or five different parts of one dream, manifestly connected or not. Dream analysis shows then that all dreams or dream-parts have the same content: sometimes the first one may be the most undisguised statement, and the subsequent ones be more and more covered up. At other times, *sequence analysis* will reveal the opposite—a decrease of defensive distortion of latent content, and in others, again, there may be a fluctuation back and forth. This greatly resembles phenomena observed in TAT productions (6). By and large, however, the dream is primarily a primary process, and shows less ego participation than any other mental phenoma, save possibly psychotic productions.[3]

[3] This, incidentally, is related to the problems of diagnostic value of dreams, in terms of identification of nosological syndromes from dreams: most psychoanalysts, including myself, hold that one cannot diagnose a psychosis from the manifest dream content—to-wit, the dreams of psychotics are not manifestly differentiable from those of non-psychotics. Some psychiatrists, notably Kant (22), have suggested that there are typical dreams of psychotics. This problem involved the assumption that there may be more or less pure "primary process" in dreams, and thus, by implication, better or less-well functioning defenses in the dream. I would be willing to assume that in advanced or chronic psychotics there may be such a decided lack of any dreamwork as to be manifestly different: psychoanalysts, in a way, agree with this position when they differentiate children's dreams from those of adults, as being manifestly more primitive and more directly wish-fulfilling. Similarly, if in a clinical situation, a patient

Hypnagogue phenomena[4] are those associated with the process of falling asleep. Described particularly by Silberer (36) as autosymbolic phenomenon, and by Isakower (21), these phenomena are predicated upon partially existing cognitive ego functions: a subjective awareness of the process of falling asleep, of the withdrawal of the cognitive functions and of external cathexis. The most frequent type of experience is one of having a door shut or a window screen closed—sudden darkness indicating the closing of the eyes or the narrowing of the visual perception. Actually, such phenomena occur primarily when the process of falling asleep is disturbed; either in a situation where one should stay awake and struggles against falling asleep, or where anxiety disturbs the smooth self-exclusion of the ego. An even more widespread phenomenon of this type which should also be considered a hypnagogue phenomenon is the one of having fallen asleep and waking with a start upon the sensation of falling. This phenomenon is due to a disturbance in the smooth self-exclusion of the ego functions concerned with muscular control and awareness.

Preconscious fantasy: By definition, preconscious fantasies are processes which are not conscious at the time but can easily be made conscious on effort. They were most extensively described by Varendonck (37) and occur particularly while some monotonous or semi-automatic task is being performed. Frequently, upon some additional stimulus, one may "snap out of it" and suddenly become aware of the fantasies which had lived a nearly autonomous life. Such fantasies may have started as regular daydreams, or may develop in tangential relation to some internal or environmental stimulus which may be recognized as related by subjects who have learned to introspect. People in analysis, people in deep preoccupation, and pre-psychotics

would bring an openly incestuous dream before the analytic process has loosened the defenses, a psychoanalyst would at least carefully consider this lack of defensive dreamwork as a possible indication of psychosis.

[4] The distinction between hypnagogic phenomena, preconscious fantasies, and daydreaming is neither an entirely clear one nor is there agreement on the definition. Silberer stated that the autosymbolic phenomenon comes about in a transitional state between waking and sleeping, in the presence of a struggle between the two states (he did not conceptualize in terms of an ego). He gives the following example:

> He was trying to think through some philosophical problem, part of which began to elude him while he was nearly falling asleep. Suddenly, he had some dreamlike experience in which he requests some information from a secretary who morosely disregards him.

He had symbolized and concretized his quest for enlightenment as met by his sleepiness. In response to an internal stimulus, a preconscious fantasy developed autonomously which could be made conscious and brought in relation to a conscious process.

On the other hand, much of what Varendonck (37) reported as preconscious fantasy also took place in the process of falling asleep. Rapaport (32) believes that Varendonck spoke of preconscious fantasies when he really meant daydreams. At any rate, for myself, I wish to differentiate preconscious fantasies by their quality of being *ego alien* (similar to mild obsessive phenomena), from such fantasy thinking as is *ego syntonic*, and which I prefer to reserve the term daydreams for. It is, however, entirely possible for a person at one time to run the entire continuum from hypnagogue thinking over preconscious thinking, daydreaming, and problem solving, all possibly related to the same problem. Kris (23) in a discussion of preconscious mental processes has discussed this continuum and its relation to the creative process, and its metapsychologic implications.

may experience an abundance of such fantasies which are to a certain extent an ego function (inasmuch as they are in some relationship to environment or originally conscious stimuli) and can be made conscious upon effort.

Daydreaming: Daydreams are to a considerable extent under the ego's control. Many people will reach for readymade daydreams which they think of routinely in frustrating situations. Others will keep their daydreams within limits of some reality. Indeed, controlled types of daydreams may be the forerunners and concomitants of problem solving behavior (e.g., the man who daydreams of success and in this process hits on a workable formula).

Free associating: The patient who is asked to "free associate" in the clinical situation is asked to perform a complex task: to let his mind run freely—that is, to decrease the controlling function of his ego and at the same time, or in brief succession, to increase the cognitive function of the ego concerned with self-awareness. It is the nature of this complex task, of an *oscillating* function or ability of the ego to change from self-exclusion to control, that makes free association such a difficult task for some patients. Notably, obsessive compulsives find it difficult to "let go" and thus report a dearth of ideas. We may say that there, rigidity is in direct contrast to the flexibility of ego functions necessary for free associating. Frequently, their ability to really free associate coincides only with the time of their cure. Some other patients, possibly hysterics more than others, may find it difficult to keep enough "distance" to do a good job with the observing function (the tasks for the ego become even more complex when a third function becomes necessary: aside from "letting go" and observing, insight presupposes the ability to see new configurations).

Artistic creation: This process, similar to free association also necessitates both the ability of self-exclusion of the ego, for "inspiration" and the rapid change to cognitive critical awareness when producing. Kris has pointed out that only in the presence of intact ego functions can one speak of art (an accentuated form of *communication of experiences* in distinction to the productions of advanced psychotics). In the case of many borderline or ambulatory psychotics who are artists, there is still enough ego function left so that one can consider their productions as truly artistic.

Projective techniques: In a procedure such as the TAT the subject is again asked to perform a complex task. We ask him to let his mind run freely: that is, to induce some self-exclusion of the ego. Then we continue our instruction to the effect that he is to tell a story about the picture and tell us about what is going on, what led up to the situation, and what the outcome will be; we ask him to adhere to the stimulus, and to maintain a set consistent with our formula. As in free association and artistic production, performance on the TAT and other projective techniques presupposes an oscillating function of the ego. The overly rigid patient will not be able to decrease the control, will give only descriptive data and "meager" data altogether; the patient with insufficient ego control will "leave the stimulus and leave the task".

The "letting go" gives us the drive content thus far primarily studied in projective methods. By observing the oscillating functions

and the defenses against the drive material, we may infer ego strength on the one hand and often may observe drive content that does not appear prima facie. The following stories may illustrate the point:

#9BM: 'Group of 4 men who are running away from something—something the fellow on the left is looking for. Probably they've broken out of confinement. The position — the way they're lying doesn't seem to indicate they're under any great stress or tension. They could just as well be 4 hunters. The fellow on the left could be watching for whatever they're hunting: duck or game of any sort. Little siesta after working on any kind of on-location job.'

This response of an adolescent boy really consists of at least three stories: They are running away from something, possibly escaping confinement. A much more innocuous story than the first: they are merely hunting. Even more innocuous: even the aggressive connotation of hunting is given up and the picture becomes one of utmost peace and passivity — siesta — in a make believe (movie) situation.

Thus we see one way of meeting, with obsessive elaboration, the threat of (one's own) aggression.

An even more fascinating response was given by a middle-aged scientist in his story to #13MF.

'A man and woman who may be in a bedroom or living room with a cot. She may have been ill and had been put to bed. The man may have seen to her wants or he may be a doctor who had been with her for a long time, especially through the night and is now very tired. The woman may be sleeping or resting or may have died and the man, her husband or doctor, has just gone through a long siege or, if the woman is his wife who died, he shows sorrow or if she is just sick he shows fear and is tired. It may be that homicide has been committed and the man shows remorse and realization of the gravity of his act. Or there may have been cohabitation, the woman undraped in bed, the man having dressed. Also, a husband getting up early in the morning to go to work not quite awake, while his wife is still asleep.'

In this case we have at least four stories showing a progression from a relatively innocuous apperception to breakthrough of plainly homicidal thoughts. Whether cohabitation is a further progression to an even worse crime in the mind of the subject, or whether it constitutes a renewed vigor of defenses which culminates in the utterly innocuous domestic scene, could not be ascertained.

It is by such study that fine features of defense and character may be discovered.

From the ellipse, the omission, or from the sequence of defenses, we may learn the content. A study of the equilibrium of drive and control is the most useful method of investigation.[5]

Similarly, in the Rorschach we study the ego's ability to perceive and to organize, and to perform complex tasks (see later discussion of colorshock); to control anxiety, aggression, and sexual impulses.

In figure drawing, graphology, and the Mira test we study the motor executive functions of the ego. In the Bender Gestalt test and to a certain extent in the other

[5] *Problem solving* as an imaginative production is the type of activity involving more ego participation than any of the others. Here, reality testing and adaptation, with all the resources of the ego, is necessary. Nevertheless, even here a certain ability for self-exclusion of the ego may be helpful. The cases in which a solution to a difficult problem comes to one just prior to falling asleep or even apparently during the sleep, are not infrequent. The capacity for insight—to see new wholes—presupposes some flexibility of the perceived boundaries of existing wholes.

tests, the ability to perceive figure and ground properly and the capacity of interpreting well, are studied (see discussion of signs). The nature of the choices involved is a matter of disagreement, but there can be no doubt that the activity of choosing between alternatives is always to a certain extent influenced by the ego; this holds true cognitively and connatively.

The ability to relate to and from the latent to the manifest (behaviorial) level—from the projective test data to actual behavior—has often been considered the crucial problem of projective testing. To be sure, I do not agree that this is so for clinical practice. In practice, the psychologist should not be called upon to make blind diagnosis. A good analyst would never interpret a dream from the manifest content without knowing the life situation and the day residuum, etc. Similarly, a psychologist should interpret only the unconscious data in the light of, and in the complementation of behavioral data. By a combination of both levels most is to be learned: if a man's TAT drips of blood and gore and he turns out to be a Casper Milquetoast behaviorally, one can make inferences as to the nature of his tensions, etc.

There are, however, certain situations in which we are legitimately called upon to make inferences from the latent to the manifest: for theoretical, experimental purposes, and such clinical ones as the prediction of criminal behavior and suicide, and such problems as personnel selection.

The ego must be considered the intervening variable between the latent and the manifest level! A study of ego functions in relation to drive may permit one to see that aggressive impulses are or are not permitted to break through. The following story of an obsessive patient is demonstrative:

> #17. 'The man shown here is a circus performer and he's been one for many years. His ambition has always been to be a solo performer instead of part of a trapeze trio. Until now he has not had the opportunity. In tonight's performance he will save a fellow trouper from a serious accident and as a reward for his bravery will be given the chance to do his act alone.

We can formulate the following: this person wants to be in the limelight and do away with the competitors; this thought is not permitted expression. Instead of the aggressive thought, the hero gives help in an accident; that is, the aggression is impersonalized, the helpfulness appears manifestly, and the original goal is given as a reward. In other words, sequence of the story demonstrates this subjects's use of reaction formation in avoiding expression of manifest aggression. Sometimes a picture of the entire defensive nature of the character structure reveals itself clearly in the TAT.

As in the psychoanalytic situation, small break-throughs of original impulses must be looked for to illuminate what it is the patient is resisting. For instance, the stories of a young murderer, a slip of the tongue in his story to picture 8BM is illustrative:

> 'These two boys have gone out hunting. They *shot a lot of boys—I mean animals,* and decided to split up to get more pheasants. They agreed to meet at 8:30 at night to count the game and to go home. This boy was standing in the bushes. Twenty feet from him he heard something move. He goes to look at what he caught and finds his friend and rushes him to the doctor. The doctor says the boy will be all right and in the end the boy gets OK and forgives him for what he did.'

The slip betrays the poorly controlled original aggressive impulse which becomes absorbed in a perfectly acceptable hunting story, then breaks through again in the boy's injury. An inquiry into the small detail of 8:30 at night revealed that that was the time for lights out at the institution and strongly suggested that it is at this time that his fantasies are permited to emerge. Similarly, he started his story to picture #1 like this:

'This boy does not like to practice his trumpet—I mean he likes to play his violin.'

He changes a negative response immediately to a positive one. The story he gives to picture #15 is as follows:

'An undertaker; he is very sad because he is putting to rest all these people. He goes out one night and looks with remorse at all the work he has done. He tries to find out how he can undo his work. He can do nothing about it.'

In this story, the undertaker behaves as if he had killed all the people he buries, revealing the original aggressive impulse only by what would otherwise be incongruent guilt feelings.

A relationship between drive and supergo and ego may permit one to prognosticate suicide: stories in which the punishment far exceeds the crime and in which the punishment is immediate, and severe (or cruel) are consistent with real suicidal danger in my experience.

Again, the adequacy of the hero in dealing with the task which the subject himself has constructed is an excellent criterion of ego strength. The more adequate the hero and the more appropriate and realistic, and good the outcome, the safer the inference of a person who will bring other tasks to a good completion (not entering now into the problem of specific aspects of ego strength necessary for specific jobs: the ego strength required of a research scientist is concerned with ability for detour behavior, etc., as compared to the abilities required of a combat officer—capacity for anxiety tolerance and the ability to libidinize anxiety).

Further Problems an Ego Psychology of Projective Techniques May Answer

Barren records:

I have had occasion to discuss this problem before (7) as one of the ways of failure of a technique. Murray (29) speaks of "chaff" needing to be separated from the "wheat" in TAT stories. With all due appreciation, I have to disagree with this formulation. To speak of chaff is reminiscent of the days when psychoanalysts still saw resistance as a nasty way of patients' behavior which they had to overcome. With the analysis of the ego, the analyst has learned much from the analysis of the resistances. In fact, he learns about the way of the ego and its defenses as he never could without the resistances. Similarly, analysis of the chaff, of what is considered barren, from the standpoint of the defenses of the ego, will give much information (see earlier examples). From the standpoint of determinism as an essential axiom of psychological science, every psychological performance—and thus every utterance—must be meaningfully related to the total structure of personality. It is true that practically and clinically speaking, it will usually not be worthwhile or possible to investigate each detail.

In patients analyzed for as much as three years and whose TAT's and other projective data are also available, it has been possible to compare production on the couch

and on the tests. For all practical purposes, the generalization can be made that the defenses used in the clinical situation and on the projective techniques were identical: those who use avoidance, denial, and isolation and who gave barren records, also tended to spend hours on the couch reporting apparently meaningless data which had to be interpreted and could become meaningful only by infering what they were *not* talking about. Recent experimental studies have clinically supported the long known fact that avoidance of aggressive responses to aggressive stimuli is indicative of a great deal of aggression (10).

Inconsistent Results:

In certain cases, failure to obtain test data which one should expect to find, may be understandable in terms of ego psychology. For instance, in patients with lobotomy or topectomy, various projective techniques and other tests may fail to show any deficit behavior. Lobotomies particularly, and topectomies to an extent, are still blind procedures – neurologically – and particularly psychologically speaking. The results and effects differ widely from case to case, in my experience; sometimes strengthening and sometimes weakening the ego. When the surgical procedure somehow interferes with the "drive-push" of the patient, the ego may be secondarily strengthened and none of its integrating functions impaired in such a way that a disturbance in the ego function would manifest itself in psychological test behavior. In other words, the failure of our tests to reveal pathology expected incident to the surgical trauma is due to the fact that none of the ego functions involved in test behavior were affected.

Signs:

"Organic signs", in my opinion, are symptoms of ego defect in situations in which the organic lesion involves ego functions. The reliability and validity of "organic signs" will be greatly improved if they will be expected only in such lesions as are likely to involve the ego functions tested in a particular procedure.[6]

Other inconsistencies in test results may consist not only of *not* finding what "ought" to be there, but also not infrequently, by finding data which "ought not" to be there, in the sense of indicating much more pathology than can be accounted for. For example, if more than fifty percent of the students of a city high school class show "schizophrenic" signs in the Rorschach, *there is obviously something wrong with the signs.*

Signs are a result of the pressure for nomothetic data in the search of the "average" man and the haunted deviant. Many of them are arrived at simply by use of faulty generalizations of the factor analysis hunters. Schizophrenia being the most fashionable diagnosis, faulty diagnosis of this syndrome by signs constitutes probably the majority of all misdiagnosis. One may willingly make the generalization that the less experienced the psychiatrist or psychologist, the more often he makes the diagnosis of schizophrenia, notwithstanding the fact that he will often enough miss it when it does exist. The main problem seems to me to be that "signs" of schizophrenia are almost all signs of disturbances of the ego such as poor control, poor reality testing, etc. While I have gone on record describing ego weakness as

[6] The ego disturbance may well be related to the amount of destruction following Lashley's law of mass-action.

the main factor in schizophrenia and other disorders (5) it has to be remembered that it is not the sole criterion (cathexis also playing a role) and that other conditions of ego weakness may obtain similar ego indicators. Adolescents notably have a weak ego, and many a phenomenon in adolescence would have to be interpreted as schizophrenic in other age groups (this makes the diagnosis of the real adolescent schizophrenic the most difficult one I know). By the same token, an artist who has learned to exclude his ego functions in creative situations may "let go" in the testing situation to the point of giving signs of ego weakness which may be inappropriately interpreted as schizophrenic. Eron (11) has shown that what was reported as schizophrenic in TAT's by Rapaport (31) could be found frequently in non-schizophrenics of all kinds, including people who have to be considered normal.

Another group that is frequently inappropriately diagnosed schizophrenic on the basis of signs are the mentally deficient. These patients also have a defect of the ego which often manifests itself in poor control, poor perception of reality, even paranoid interpretation of an environment which they have every reason to fear and suspect of "putting something over" on them. It is not useful to mistake their intellectual deficit state with a psychosis.

Color Shock:

Color shock is one of the most interesting and most embattled "signs" of the Rorschach. Siipola's (35) work on this phenomenon seems most impressive: she, in essence, contends that "color shock" exists only when color and form suggest divergent concepts. There are three different ways of dealing with this problem: the normal may be able to achieve an integration; an object first suggesting a bear by shape but being green in color may be quickly seen by him as a chameleon. The neurotic may be stymied and "shocked" into silence by the conceptual conflict; the psychotic may avoid the conflict, since his judgment is impaired to the point where he cheerfully gives the response "green grass bear." It is Siipola's contention that colorshock occurs only where form and color clash and that it constitutes a response to a more difficult task. One could go on to say that this is best stated in terms of ego psychology, namely, that the normal's ego is strong enough to achieve a difficult integration, the neurotic's ego is too weak to accomplish this, and the judgmental functions of the psychotic's ego are so impaired as to easily combine form and color inappropriately. In line with what was said above about caution in the interpretation of signs, it must be pointed out that a non-representational artist – accustomed to decreasing his ego functions—without being psychotic, might well not hesitate to say "green grass bear," and that a psychoanalyzed subject may equate the testing situation with the analytic situation and induce a similar ego-excluding "set" which might permit him the same grass bear response.

Faking:

Superseding questionnaires and rating scales, projective psychologists like to think of themselves as real scientists, and practically foolproof. All the more disturbing to them are, therefore, reports of successful faking on the Rorschach, the TAT, and other tests. Such faking can be understood and restricted to its limitations by understanding the productions from an ego

point of view: to the extent to which conscious attitudes and conscious ego control can be introduced, the subject may alter the record to a relatively small degree in one direction or another, concerning such variables as over all "wholesomeness." Particularly with regard to Weisskopf's and Dieppa's work with the TAT (38), it should be remembered that they used only a few pictures and *the* most difficult task for the subject would be to fake *consistently* over the whole series of pictures. Furthermore, an analysis of the defenses would probably reveal the basic structure of the character however much faking the subject would endeavor to engage in. And of course formal characteristics which, though under the control of the ego, are not under its conscious control and not on the semantic level, are not likely to be affected at all.

POSSIBLE MEANS OF INCREASING PRODUCTIVITY OF TEST MATERIAL BY MEANS OF AN EGO PSYCHOLOGICAL APPROACH

If we pick relative "barrenness" of records as the chief complaint of psychologists, we may be able to suggest a number of means to increase productivity.

1. *An analysis of the defenses* has already been discussed at some length. If barrenness is the result of overly increased ego control, a number of measures able to decrease ego control must then increase the productivity. This could be accomplished by
2. *Providing stronger stimuli:* if the stimuli have more affective pull, the ego will find it more difficult to control the affect. In the TAT this coincides with the need for "better" pictures—primarily a wider range of stimuli to facilitate study of apperceptive distortions of situations not currently provided for in the existing set.
3. Any other form of *increase of pressure* might also increase productivity. Stein's use of tachistoscope exposure is one way in which this might be done. Both this approach and the one of stronger stimuli might prove a double-edged sword: While this might decrease the ego control in some subjects, others might even freeze up more. The standard approach would be attempted first and only if this has failed and if there are no other contraindications (such as excessive anxiety) will it be economical often enough to increase the pressure.
4. *Increasing ambiguity* has been attempted by Weisskopf (39) and Weiskopf and Lynn (40) with the TAT and the CAT. Presenting tracings of the usual pictures and interrupting the outlines to make less good "Gestalten" may—up to a point—increase some productivity. Murray's recent modification (29) in presenting the picture only for thirty seconds and then removing it, also increases ambiguity and prevents excessive descriptive clinging to the stimulus.
5. *Physiological means* of weakening the ego, such as barbiturates or alcohol have worked well at times, in my experience.
6. *A stress inquiry* in the form of a request for controlled associations to any of the stories, and particularly to any specific concrete references in them (after all stories have been told) may be a useful means of increasing the data of oth-

erwise barren records.

7. Finally, if a certain test fails to give the necessary data, *use another test.* I am not very much in favor of the routine use of batteries. It reminds one of shot gun prescriptions of pre-scientific medicine. The doctor put dozens of ingredients into every prescription in the hope that if one would not help, another might. I believe that a test should be fitted to the needs. If one needs content of psychodynamics, use the apperceptive tests; If one needs an assay of ego strength and generally quantitative indicators, use the formal expressive tests. But, if, for instance, aggression is not expressed meaningfully in the TAT, it may be very useful to study figure drawings. The verbal expression of aggression may be successfully controlled when its muscular expression is clearly seen. Often enough the problem can be stated in a generalization, namely, that when one fails to obtain data on the semantic level, tests probing the subsemantic area may produce information. There is good reason, on the other hand, not to leave out the semantic tests routinely since they can obtain much more detailed, more subtle information than can safely be inferred from the organizational sub - semantic methods of personality appraisal.

Summary

A study of performance on projective methods from the standpoint of ego psychology will make it possible to subsume all the many tests currently called "projective" under one theoretical roof. Ego psychology will permit the understanding of many seeming incongruities such as the finding of more pathology or less pathology than seems reasonable; may make barren records useful; may modify to greater accuracy the nature of "signs," and introduce measures of increasing the productivity of a given method, when necessary.

Projective techniques are best studied as products of ego functioning, and can be compared as to similarities and differences—in that respect—to dreams, hypnagogue phenomena, preconscious fantasies, daydreams, free associations, artistic productions, and problem-solving.

Apperception as well as formal expressive, motor performance (as in figure drawing, Rorschach, graphology, the Mira test) and also Gestalt functions and the making of choices (as involved in the Szondi) are all functions of the ego. In all instances we study the oscillatingly regulatory functions of the ego in relation to stimuli and drives.

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Clinical Aspects of Failures in the Projective Techniques

MOLLY HARROWER, PH.D.
New York City Court of Domestic Relations

The choice of the topic *"Failures in the Projective Techniques"* might be said to be an indication that the Society has come of age. For too long we have gone around like ostriches with our heads in the sand refusing to assess our instruments. It is natural, therefore, as a starting point, to ask why this reluctance and why this assumption on the part of so many people that to recognize imperfections in our tools was somehow a disloyal rather than a realistic procedure.

One of the reasons, perhaps, why it has been so difficult for us to look at our instruments objectively has been that in our early stages we, as "Projective" psychologists, were a small minority that had to hold together at all costs to gain a foothold in a basically hostile and suspicious psychological universe. When only a handful of people knew the merits and advantages of the projective techniques, it naturally behooved them to look for and consolidate these advantages. But as the army of projective workers has grown, this position is no longer true. In fact, not to know the projectives would be almost psychological illiteracy at this present time.

Another reason why there has been such reluctance to face up to some of the shortcomings in some areas of each of the projective methods has been the fact of what one might call, "Klopfer, Beck, Hertz or Deri looking over one's shoulder." Probably all students at some time or other have had this thought run through their minds, "Well, if Klopfer, etc., could see this record, he would know how to reconcile it with the facts." In other words, there was an easy "out" when discrepancies appeared, for students were apt to feel that the master teachers would have solved the problem and that the difficulties lay in their own inadequacies and inferior performances.

We have all, as a matter of fact, felt guilty in one way or another about our "failures" to the extent that we have been prevented from studying the discrepancies objectively and learning from them. This feeling, however, finds no counterpart in other sciences. No one dreams, for example, of questioning the general value of X-rays or of radiologists, in those cases where a particular lesion does not happen to show. The problem is rather *why* does it not show in *this* case, through *this* medium. We have now reached a point, surely, where we should be equally objective and record systematically and study carefully all those cases where there are discrepancies between two sets of findings.

Let us, therefore, without guilt and embarrassment begin to sort out those occasions and conditions where, for various reasons, the projective material is not adequate to the task that has been imposed on it.

As the first point may be listed the fact that at *some* time or other each one of us is *inexperienced* in the projectives, and that at *all* times there will be psychologists who are at various stages of experience or inexperience. Any of us who has, through the years, accumulated a large mass of material and who has the opportunity to go back and

look over some of our earlier reports or findings in the light of the accumulated "reference library" of cases which accrue to us has had the experience of being amazed at some of our early deductions. What may have seemed self-evident in the light of limited experience may become highly problematical as one has been exposed to more and more material. Unquestionably, some failures are due to inexperience and it is not without some reason that the "teacher looking over the shoulder" complex has grown up.

The second point is somewhat akin to this but it is more apt to be obscured. Namely, what might be called *over-experience in certain areas*. If one has been embedded in a community which nets one a fairly consistent and uniform type of record, one tends to set one's standards or norms by this standard and to superimpose it everywhere. While in some instances, this may mean that the highly specialized individual is alerted very early and picks up with miraculous ease indications in a record that belong to his particular category, indications, that is, that are too slight to have been picked up by most people, there is the converse danger which leads to many "failures" that he will read into other records the particular characteristic to which he is sensitized. Frequently, one would say he has developed an oversensitivity to pathology which results from excellent clinical training and experience but is not offset by sufficient exposure to large and varied segments of the total population.

A third type of failure results from what might be called exaggerated zeal concerning any one particular test. There have been those amongst us who have gone through phases of complete devotion to some one projective method so that we have felt it is the be-all and end-all of everything and can safely do alone, what, it so happens, even a battery of tests is sometimes hard-put to achieve. This one-sided devotion, as a matter of fact, rarely does the selected tool much good since, sooner or later, there comes a day of reckoning when the type of question asked, cannot be answered, and in all probability a rival method will appear to have greater value.

Fourthly, and somewhat along these lines, failures may result from *insufficient attention paid to the discrepancies between the findings on certain of the projective methods*. Assuming that several tools net one more information than one, there has been little systematic study on the *patterns of discrepancy* which arise when a uniform battery of tests is employed with a large population. We do not yet know what it means when one test shows severe pathology but the other five would represent a much more "normal" picture. Follow-up studies by the writer on such interesting cases have yielded as yet nothing systematic. However, we have a large, potentially valuable, area of unexplored territory if these patterns of "poor versus better" performance are studied. What does it mean when pathology breaks through in one or other of the projectives? How seriously must this be weighted? Or, how significant is this pathological component in the total makeup of the individual?

A fifth type of error might be described as the "good pilot" error, or the "not knowing what you are looking for error." On many occasions, psychologists have undertaken to spot people who would

make "good such-and-such" without being aware either of the test pattern which would empirically correlate with a good "such-and-such" or even with those personality characteristics, outside of the test findings, which were most desirable for the job in question. With optimism and good will, projectivists have rushed in to areas where angels were unwilling to tread, the error lying not in this willingness to participate but in the failure to demand the type of preliminary study that alone would have made their task possible. In other words, they operated on the assumption that what was "a good Rorschach" was that which could be deduced from the master's initial principles and the norms for all "good such-and suches" were, until proved otherwise, supposed to correspond to the norms for "good Rorschachs."

The sixth type of failure is, in a way, a counterpart of the foregoing. It might be called *lack of empirical knowledge.* Many investigators have not handled large cross-sections of the total population, so that they do not realize to what extent persons with "poor Rorschach records" can, nonetheless, still function efficiently under certain conditions. So long as we keep our pronouncements in terms of the characteristics of the actual findings on the projectives, Very Disturbed *Records,* Inadequate *Records,* Improverished *Records,* etc., there can be little question as to uniformity in the findings of the adequately trained psychologist. However, usually what we have done, and this without adequate empirical support, is to claim that persons whose *records* are disturbed, impoverished, inadequate, etc., must be *functioning* in a way that corresponds to these findings. However, this is simply not the case. While the *internal dynamics* which are reflected in the test findings must be those as shown, we do not, to date, know enough about the conditions and factors which prevent these internal conditions from being mirrored in such a way that they can be considered characteristic clinically of the individual's behavior. We need an empirical study of the life-situations of those persons whose achievements apparently belie the psychological equipment with which they are working.

The seventh point again grows out of the foregoing but should be given status in its own right. This might be called our failure to realize that the internal conditions of the total organism, as reflected in the projectives, are not sufficient, regardless of a full and accurate description thereof, to describe the total picture. Frequently, in order to make these internal conditions meaningful, one must know something about the individual in relationship to his environment, be it physical or psychological. Specifically, to take a medical example, polyeythemia, or a high red blood count, means something entirely different at sea level or in the Andes. In the latter, it is a normal adaptation of the organism to a challenging environment; in the former, it would mean severe pathology. When asked to function blind, we know too little of the individual's psychological environment in many cases so that the reports of the internal conditions may lead us to erroneous deductions.

Several examples of this may be given. There are certain types of life-situations and conditions where pathological traits are actually means of survival. Take for exam-

ple the record of a survivor of a concentration camp. An interpretation of this record which took these unusual conditions into account was quite different than it would have been had they not been known to the examiner and appraiser. Or, take for example, two cadet pilots, each with comparable projective material, one of whom has a strong motivation to flying, the other has not. Interpretation of those internal conditions which are reflected by the projectives *alone* would lead to an incomplete estimate. A third example which, as a matter of fact, one sees quite frequently, is that type of record given by some highly successful artistic individuals and (with imperceptible variation) by persons who are considerably disturbed psychologically. Without knowledge that, in the first case, there is a direct outlet or expression for some of the acute internal pressures, again an erroneous evaluation will result.

An eighth type of failure may be caricatured by the assumption that a single Rorschach record epitomized once and for all, for better or for worse, that individual's psychological potentialities. It has always seemed that had the Rorschach been a test which was quicker to administer as, for example, the Szondi, that Rorschach, like Szondi, would have come up initially with the suggestion that ten Rorschach records over a short period of time give you information that one Rorschach record never will! The Szondi, which attempts a longitudinal section in addition to a cross-section, picking up the significant changes and fluctuations, highlights this all important fact that at no one moment of any individual's life can one get more than a snapshot or cross-section. The living individual moves psychologically and physically all the time. *What we need is a strip of movie film of the way he moves, rather than a set of stills.*

Another source of error is the assumption that behavioral, or what one might even call linguistic, entities (a "murderer," for example) will have a direct counterpart in the projective techniques such that they can be spotted *per se*. Needless to say, in an attempt to highlight and isolate these attitudes which are apt to bring about less productive use of the projectives, these attitudes have been sharpened to make them recognizable. But somewhere or other in all of us, is the implicit assumption that there are going to be the same type of entities from one set of material as from another. We minimize the value of the projectives insofar as this concept is allowed to permeate our thinking.

Take, for example, this very question of the murderer and let us contrast two fourteen-year-olds who have identical court records, namely that each has shot a younger child. A comparison of the projective material between these two youngsters shows not only no similarity but such wide discrepancy that even the thought of equating them for common characteristics is out of the question. At the same time, each child can be equated on most of the tests with another boy of equal age whose delinquent act varies markedly from his. The flagrant and gross psycho-pathology of one of the fourteen-year-old murderers on the Rorschach, Figure Drawings and Szondi, can be equated with other equally pathological records of children who have *not* murdered.[1] The second boy's findings belong, without question, in that general zone which

[1] See Figure 1

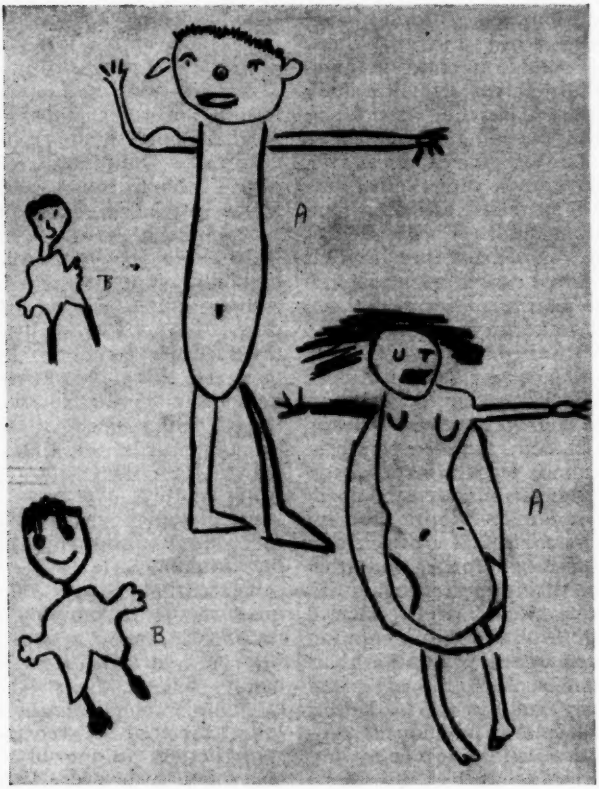

FIGURE 1

one could describe as "within normal limits," and can also be "equated" with another child with a relatively innocuous delinquent record.[2]

What seems important is that these differences (which have importance for the future growth of the child and his inter-relation with his family and society) should be utilized to their full extent. Nobody wants to know that the children are "murderers". *This fact is known.* But what shall be *done* with these children is something towards which material from the projectives can make a valid contribution.

At times it would appear as if the psychologist had erroneously envisaged his task as a scrupulous search for a common element in obviously diverse records because the "label" that had been attached to two individuals is in each case

[2] See Fig. 2, in each case one set of drawings, either A or B and either C or D is by a murderer.

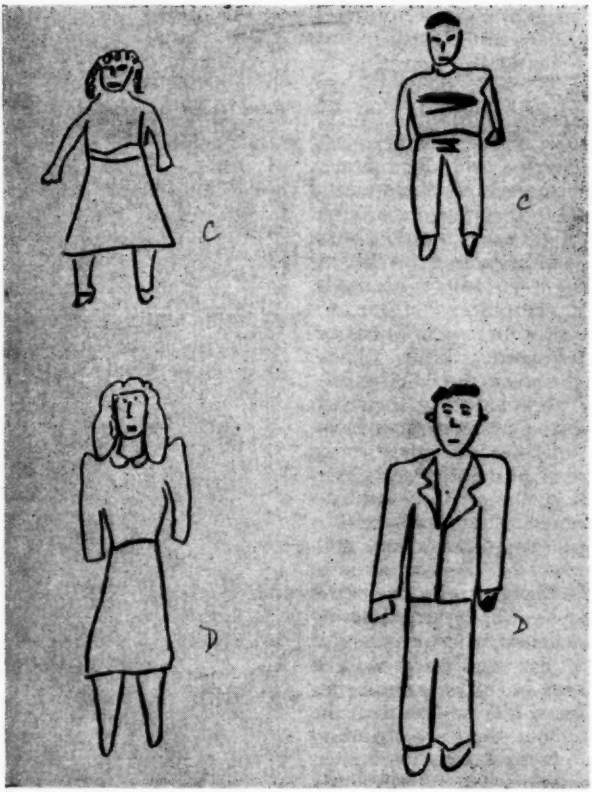

FIGURE 2

the same. Our major contribution will come, by minimizing this orientation and in its place putting our emphasis on the aspects of the projective material which gives information which cannot be derived elsewhere. In these particular cases which will be reported shortly by some of my colleagues[3] it was of utmost importance that the excellent potentialities of one of the boys be fully recognized in order that the community program outlined for his reinstatement in his family, school and social millieu could be undertaken with the security that derived from a careful ruling out of all serious psychological disturbance.

Figures 1 and 2 show the drawings of four 14-year old delinquents, including the two murderers we have spoken of. "A" and "B", as opposed to "C" and "D", clearly represent different levels of

[3] I am indebted to Dr. Harris Peck, Dr. Milton Kurian, Miss Tatania Juzak, and Mr. Carmi Harari.

pathology. One child in Figure 1 and one in Figure 2 is a murderer. The Rorschach and Szondi records differ as markedly between the "level" of "A" and "B" on the one hand, and "C" and "D" on the other, as do the drawings.

On the subject of delinquency, observations made by Sheldon and Eleanor Glueck (1) may be brought in to highlight and synthesize some of what has been said up to this point. The Gluecks, for example, show that when a certain four conditions are fulfilled, delinquent behavior frequently results. These four conditions are a "delinquent attitude" towards life, a Rorschach record which has been proved empirically by the Schachtels to be characteristic of delinquent behavior, a delinquent physique and delinquent home circumstances. But there are also non-delinquent children in whom all these four conditions are fulfilled. In the case of the child who has all the predisposing factors for delinquency, who has, so to speak, all the cards stacked against him, but who nonetheless emerges as a different entity, the non-delinquent, there are obviously some "x" factors, some unknown variables which are sufficiently strong to change the expected result.

However, far from becoming discouraged with our tools it seems to me that we should bend every effort to isolate and set up experiments in regard to this type of apparent discrepancy. Let us look systematically for what might be called "Rorschach" or "Szondi twins". Let us look for individuals with total test profiles as similar as possible. Then let us study to what extent these individuals behave in a similar fashion or are "diagnosed", or labelled in different ways.

To what extent have we studied systematically those cases where there exists discrepancy between psychiatric diagnoses and clinical judgment? Here is an area where one is apt to speak of the "failures" of the p r o j e c t i v e techniques. Schachtel, for example, has made a separate appendix in the Gluecks' volume in which he has listed those cases where there appears to be obvious discrepancies.

One of the areas where we are most vulnerable to criticism from experimentalists and academic psychologists is the lack of agreement between so-called experts in various experimental situations. Let us take two examples of this, one from an experimental setup of my own, the other from Dr. Wayne Holtzman's investigations with successful and unsuccessful pilots.

A couple of years ago, the services were enlisted of ten well-known psychologists on the problem of differential diagnosis to be made from a Rorschach record, the Szondi findings, the Bellevue-Wechsler and the Figure Drawings. Knowing that this is to some extent an imposition on the individual's time, an attempt was made to keep the experiment as simple as possible, asking only that the closest diagnosis be checked from a list of ten possible choices. These possible choices included the statement that the patient was schizophrenic, manic-depressive in manic phase, manic-depressive, depressed, anxiety neurosis, obsessional neurosis, a highly schizoid but brilliant individual, a normal individual of high intelligence. The examiners of the material were also asked to supply any other diagnosis that they felt they wished to make.

The results in this case were divergent but interesting. One expert labeled the patient schizophrenic. Two considered him normal. One

adding the diagnosis that he was a "normal with many problems". The other seven selected the "highly schizoid individual" with various rephrasing and modifications of that original label.

This is interesting because from these reports of the experts one runs the gamut from normality to the most serious diagnosis although it is true that 70% of the rest of the group agree one with the other. It is also interesting to note that if one considers that there is some kind of imaginary line drawn between the schizophrenic, the schizoid and brilliant individual and the gifted normal, all choices were somewhere on this line but were not placed in any other of the possible areas.

After a two-year follow-up on the patient himself, it seems that while at the time it was strongly suspected that he was schizophrenic, his extraordinary responsiveness to analytic treatment and his apparent well-being over a considerable period of time again leaves the psychiatric diagnosis in doubt.

It is true that this is not an example of the widest kind of divergent diagnoses. It brings up, however, an interesting question, namely, to what extent does the personality pattern or personality test profile of the examiner influence his appraisal of the records?

The experiments of Wayne Holtzman (2) are more disturbing in one way. Here each of 20 experts were sent 20 records of pilots who had either passed successfully or failed for psychological or psychiatric reasons in their training program at Randolph Field. No examiner knew how many of each group, namely pass or fail, was present in the 20 records which he received. A battery of tests had been administered. All test findings were submitted. It was permissible to rate in terms of any one test or a global picture of the whole.

Three of the 20 examiners achieved 14 correct choices. This is apparently not statistically significant but it is the best that we could do. I have, in recent months, gone over my 20 cases again and again in the light of the knowledge of whether or not they passed or failed. I have repeated the experiment again blind on myself after at least eight month's interval, and I found that my reasoning held and that I again picked out the same distribution of pass or fail. Going back then over those who had passed but whom I had considered would fail, I found that I must include in a "pass" category some persons with frankly abnormal records. However, other records of this same pathological type turned out, as we might expect, to have failed. Frankly, we do not know to what degree masked psychopathology or even unquestionable psychopathology as picked up from the tests can nonetheless function adequately within such a training program.

A further breakdown of the cases which I had correctly assigned revealed that I had picked all but one of those who actually failed. In my group there were eight pilots who had failed the course. My score in the pass group was less successful since it included too many "rulings out" or inability to believe that records which showed so much disturbance could function as good pilots.

There is one final area which, because of lack of recognition, presents us with the possibilities of many pitfalls. This is our lack of awareness of the effect of cultural and social factors on the general

norms that may be expected from the various projectives. In particular such studies as Schachtel's, Aults' and the material which will be published from the Court Intake Project of the Domestic Relations Court in the City of New York. In regard to the latter, when contrasted with a middle-class population, the norms for our lower-class delinquent group show some very marked deviations, particularly in the Rorschach. We might caution again what was mentioned before, namely, that a profile in itself, a Rorschach record in itself, without knowledge of the various environmental factors which are pertinent for appraising the inner distribution of stresses will always result in a less valid report and in some instances may lead us into gross error.

As a conclusion may I voice again the plea for a systematic experimental attack on those "discrepancies", those "failures", to which attention has been called, and, may I urge that our attitude towards those unknown variables in our projective techniques be one not of hush-hush, cover-up or feeling of embarrassment but of an aggressive search for a better understanding of our material.

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Failures of the Rorschach Technique

JOSEPH ZUBIN, PH.D.
New York Psychiatric Institute, Columbia University

If Herman Rorschach had not been carried off by the infection following a minor operation, he would have celebrated his 68th birthday last November 8th. He would have looked approvingly on our efforts and would have helped make this symposium on failures a success by providing methods for their elimination in the future. For no one was more tentative in his conclusions, more demanding of continual self-survey and revision than the man who lent his name to the major projective technique. "The conclusions drawn," he says, "are to be regarded more as observations (remarks) than as theoretical deductions. The theoretical foundation for the experiment is, for the most part, still incomplete." He even went as far as hoping for " . . . control experiments taking up each symptom individually, and other psychological methods which might also be used in control research." (24)

It is both a brave and a wise move that the Society for Projective Techniques has undertaken in this symposium and it is to be congratulated on its maturity and integrity. Like the post-mortem in surgery, failures in projective techniques ought to be far more revealing and instructive than the reports of successful cases. We stand to benefit from our mistakes, find out what changes need to be introduced, what hypotheses need to be altered and what expectations need to be amended. Following the custom of the surgeons, only the outstanding failures of the Rorschach technique will be discussed, the outstanding successes being omitted. A cataloguing of one's failures without scanning the successes is trying to even the most mature of souls, but since it is motivated by a search for improvement we can all bear up under it. After analyzing the failures, a hypothesis to explain them will be presented, which may perhaps repay, in part, for the masochistic trend a self-analysis may engender.

One outstanding Rorschach worker has made the following surmise about Rorschach's own reaction to the current scene: "Rorschach today would still recognize the cards. Brilliant though he was, I doubt if he could find time to read the voluminous literature which is well enroute to the thousand mark. I am certain that, if he could, he would be startled that from his little experiment following the 'scoring' of the responses, there emerge invaluable facts relating specifically to the way in which the patient sees his world, approaches and handles it, and of what this world consists. His anxieties and insecurities, his hurts and wishes, his fictions, his needs, his assets and liabilities, his likes and dislikes—all of these and more emerge to be viewed by the examiner. Moreover, the pattern reveals also the meaning of these things to him, the configuration of his personality which thus results, and the motivations of his behavior. It, furthermore, aids in differential diagnosis, particular-

ly between the organic and functional types of illness, and among the affect and content disorders. The expert examiner can also obtain from the response record a practical estimation of such important personality features as intellectual efficiency, emotional maturity and balance, and degree and depth of reality acceptance. Finally, the procedure serves as a guide to therapy and an index of its success or failure." (19)

What validity do these claims have? Let us take a look at the record. The following questions need to be answered: 1) What reliability does the Rorschach technique possess? 2) What validity? 3) What relationship does it bear to the changes brought on by therapy, and 4) to the outcome of therapy, and 5) what light has recent research cast on these problems?

First, what about the reliability of scoring? This question has received but little attention and it is generally taken for granted that scoring has a high degree of reliability. Hertz, (18), however, has stated on the basis of her long experience that "scoring still remains a matter of skill—art, if you will." Though this statement was made 18 years ago, it still largely holds true today. Ramzy and Pickard (22) found that only after considerable discussion and arbitrary acceptance of certain conventions were they able to obtain consistency in their scoring. It is noteworthy that appeal to text-books only increased their confusion. Even after this collusion, the degree of agreement was only 90% for the location category. Since Beck's location tabulations were followed, it is surprising that the degree of agreement was not perfect. For determinants of Form and the Movement variety, the agreement dropped to 83%, and for the Color and Shading determinants to 75%. As far as content was concerned, following Beck's classifications an agreement of 99% was obtained. Ames and her associates report their reliabilities in terms of product moment correlation coefficients: location categories, .92; form and movement categories, .90; color and shading, etc., .80, and content categories, .97 (1). These results are essentially in keeping with those reported by Ramzy and Pickard. Since according to Rorschach, "The actual content of the interpretations comes into consideration only secondarily" the determinants being of major importance, it is clear that the best estimate of agreement for the major scoring categories is only 80%. This is a far cry from the degree of agreement expected of an individual test. The lack of objectivity in scoring is further evidenced by Baughman's experiment (5) in which 15 Veterans Administration examiners disagreed significantly in scoring on 16 out of 22 scoring categories in records based on a random selection of cases culled from their files. It is clear that failure to provide an objective scoring system is our first failure.

The reliability of the test can not be judged by split-half methods because of the heterogeneity of the blots, nor can it be judged by test-retest because of the memory factor. Alternate forms are required for this purpose. Eichler (12) reports that he tried to obtain a reliability estimate by correlating the Behn-Rorschach with the Rorschach but obtained such low reliabilities that he concluded the two forms were similar but not parallel. Thus, lack of reliability is the second failure.

The validity of the test will be analyzed from the following points

of view: 1) subjective, 2) clinical, 3) statistical, and 4) experimental.

Subjective and Clinical

Subjective validation of the testimonial variety in which he who comes to scoff remains to pray, will not be commented on further. This type of evidence is so clearly discountable as utterly unscientific, that it is not even to be counted among our failures.

The clinical method sometimes consists of administering and scoring the test, collecting data on the subjects' subsequent behavior and then going back to the protocol, in which are "found" signs which "unmistakably" fortell such behavior. Unless a cross validation of these signs is undertaken in another study, it is fruitless to accept them as indicative of future behavior, because with sufficient imagination and exertion of effort through trial and error, pseudosignificant signs can be found in any test. Unfortuately, such cross validation is rarely encountered.

Blind analysis is one of the spectacular aspects of the Rorschach technique and has probably been the most important factor in the acceptance of the Rorschach. One would wish that this method could be made more explicit and more public, and that the enthusiastic proponents of this method were as ready to publish their failures as their successes. Until this method becomes more open to public scrutiny, it has to be placed in the doubtful category and counted neither as a success nor as a failure.

The matching technique is another way of demonstrating validity. Unfortunately, there are many inadvertent and tangential characteristics in this method, not germane to validity, which may influence the outcome. Successful matching is frequently effected on the basis of minor details or coincidences, rather than essential equivalence. Heterogeneity of matches also makes the task too easy. Determination of the precise ground on which successful pairing is made is virtually impossible. Furthermore, most of the results indicate only that the matching is better than chance, an insufficient criterion for validity. Cronbach (9) has recently devised a trenchant methodology for freeing the matching methods from these defects, but it is quite intricate, and the one application which he made yielded no success in the matching process. Thus, the clinical evidence for validity cannot be accepted scientifically, even though it is impressive. Our failure to provide more cogent evidence for clinical validity must be regarded as our third failure.

Statistical Studies

In view of Rorschach's original purpose of devising a diagnostic test for mental disorders—especially for schizophrenia—we shall first review studies that deal with the diagnostic efficacy of the test. There are very few studies in which clinical scoring and interpretation disagree markedly with clinical diagnosis when the study is conducted in the same clinic and when the two diagnosticians have had considerable experience in working together. This is certainly highly in favor of the test, and the only question a carping critic might ask is: is there a tendency for collusion to occur in such cases, since only a few authors, such as Benjamin and Ebaugh (4), point out the care they took to avoid collusion. When we examine the relationship between the individual Rorschach scores and diagnosis, a totally different picture emerges. Guilford (16) found in 3 successive samples of

about 50 neurotic patients, who were given the Rorschach in orthodox fashion, that no significant differences could be detected between their performance and that of a large normative group of cadets. Wittenborn and Holzberg (32) found zero correlation between Rorschach factors and diagnosis in 199 successive admissions. Cox (8) found only 5 scores out of a total of 43 scores differential between normal and neurotic children, and of these 5, 3 were in the content categories and only 2 in the determinant categories. These are only samples of the well-known failure of the individual Rorschach scoring categories to relate to diagnosis, which is in marked contrast to the success of the global evaluation claimed by clinical workers generally. This must be regarded as the fourth failure.

In prognosis too, the recent review by Windle (30) leaves one with very little faith in the efficacy of the prediction attributable to the Rorschach. The only successful prognostic elements seem to be based on content rather than formal factors as shown by McCall (21). This is the fifth failure.

Since Windle's article was published, two additional bits of evidence of failure of the Rorschach in the prognostic sphere have appeared. In Barron's study (2) in which the Rorschach, together with several other tests including the MMPI were given to both patients and therapists before the beginning of therapy, while the MMPI predicted outcome significantly, the Rorschach, despite all attempts ranging from the global to the atomic, failed to do so. Rogers, Knauss, and Hammond (23) report a similar experience. As long as other tests failed to predict outcome one might have attributed the failure to the heterogeneous nature of the patient group—to an admixture of early and chronic cases, for example. When other tests succeed where the Rorschach fails, one can either conclude that the Rorschach is unsuited to prediction, or that basic personality which the Rorschach claims to measure is unrelated to the type of therapy involved.

The differentiation of organic from functional conditions has also had a checkered history of success and failure: success when viewed retrospectively but failure when the results of retrospective analysis were applied to a new sample. The latest in the series is the study by Dörken and Kral (11), who after demolishing the signs of previous workers propose a new set of their own, which will probably in turn be demolished by the next worker. The vitality of this search for signs despite so many failures can only command the awe and respect of the onlooker. Whether it will finally succeed only time can tell; meanwhile it must be placed in the doubtful category.

The success that clinicans have had in global evaluation of mental patients has not been duplicated in the global evaluations of normals. Here the series of failures is truly appalling. The story is too long to review. Some of the recent examples are—Grant, Ives, and Ranzoni (15), who found zero correlation between Rorschach evaluations and case history evaluations of adjustments in 18-year-old normals. The more specific adjustment signs provided by Helen Davidson (10), fared a little better, yielding correlations from .23 to .56. The failure of the Rorschach to serve as a predictor of success in the screening programs of the armed forces, in the screening of clinical psychology students and students of psychiatry, is too well known to warrant fur-

ther comment. I shall quote only from one of these:

"It was regarded as very important that the Rorschach test should be given full opportunity to show what it had to offer in a personnel-selection setting. It was recognized that neither time nor personnel requirements for the routine administration and use of this test were consistent with the mass testing required . . . Yet the test was administered experimentally to several hundred students individually according to the prescribed procedures by members of the Rorschach Institute who were serving in one of the psychological units. Two methods of group administration were also tried, the Harrower-Erickson and our own version.

"The results were almost entirely negative. From the individual administration of the test, neither the 25 indicators taken separately or collectively nor the intuitive prediction of the examiner based upon the data he had from the administration of the test gave significant indications of validity against the pass-fail criterion. There were two samples, one of nearly 300 and the other of nearly 200. The Harrower-Erickson group-administration form also gave no evidence of being valid for pilot selection. The AAF group-administration form when scored for the number of most popular responses showed a coefficient of .24, based upon a sample of more than 600 students." (16). The inability to differentiate between normals is the sixth failure.

Special studies aimed at evaluating intelligence by means of the Rorschach also usually come-a-cropper. Wittenborn (33) compared the extreme groups selected on the basis of college-entrance examinations on 18 scores of the Rorschach and failed to find any significant relationship. (This is even worse than chance, because by chance you might have expected about one of these 18 scores to show significance on the .05 level.) The relationship of Movement to intelligence has been investigated by Tucker (28), in 100 neurotics, who found a very low correlation—.26. Wilson (31) made a more extensive study of a large college population and used Movement, Form level, Whole, Responses, Z (organization), diversity of content, and a new specially-designed-variable designated as 'specification'—and found zero correlation with intelligence.

The studies in creative ability conducted in our own laboratory on creative vs. non-creative writers, mathematical statisticians, and high school students have failed to reveal any differences on Rorschach performance and even tests especially designed to elicit Movement have failed (34). This is the seventh failure.

But the story of the use of the Rorschach with normals is not entirely a hopeless one. Sen (26), in England, one of Cyril Burt's students, applied the Rorschach to 100 Indian students who had lived together for at least two years. Scoring by means of Beck's scoring system, the correlations with personality evaluations by their colleagues were non-significant. However, when scored for content a la Burt, the correlations ranged from .57 to .66. When matching was resorted to, a global method, both scoring methods yielded a high degree of success: .85 for Beck's system, and even higher for Burt's system. Interestingly enough, however, when a factor analysis was performed on the Beck Scores and on the Burt Scores, the results of both analyses are equally trenchant in their relationship between the derived factor scores and personality. This is a

general finding in the studies in which the raw Rorschach scores failed to relate to diagnosis or personality. When factor analysis is resorted to, a rotation of the factors usually permits certain striking correlations with behavior to emerge.

We might stop here a moment to differentiate between content analysis as used by Burt and in our own laboratory and the content category as used by Rorschach. In the Rorschach there are really 3 types of classifications: Location, Determinants and Content. The Location and Determinant categories are usually spoken of as the Formal Categories, and the Content Categories are those which simply classify the percepts as animal, vegetable or mineral so to speak—that is, the category of objects it belongs to. It might be better to contrast in the Rorschach the perceptual factors—or structural factors with the content categories. There are left reaction time, popular responses, and confabulations, contaminations, etc.—which are neither determinants nor locations and hence could be classified with content.[1] It is the non-perceptual part of the Rorschach performance — the thought content — which we designate as the content aspects of Rorschach performance.

Examples of the scales used for content analysis of the Rorschach protocols are: 1) Formal content a la Rorschach 2) Dynamic content—(a) degree of evaluation included in response as judged by qualifying adjectives, (b) degree of dehumanization, (c) ascendance-submission in concepts portrayed (slaves-versus-kings, for example), (d) definiteness of concept (e) abstractness (f) dynamic qualities—alive or dead, static or moving, (g) distance in time and space (h) self-reference, (i) perseveration, (j) elaboration (k) blot vs. concept dominance, (l) interpretive attitude, etc. (33). Further evidence for the success of this type of analysis is found in Elizur (13) and in Watkins and Stauffacher (29) in this country and Sandler (25) in England.

Elizur found that an analysis of content in relation to hostility yielded significant correlations with ratings of hostility. Sandler, working with Rorschach's content categories, (and not with the type of content analysis being discussed here) made a factor analysis of the content scores of 50 psychiatric patients at Maudsley Hospital, ranging over 8 types of mental disorder. He emerged with 4 factors and determined the psychological meaning of each factor by its correlation with the personality evaluation made by psychiatric interview and case history methods. These were drawn from three levels—previous personality, general background data, and present symptoms. The productivity factor, R, for example, was highly related to previous productivity in life, to chronicity of symptoms and to a schizo-affective picture at time of hospitalization. The Anatomy factor—internal anatomical objects vs. external objects as another example, was related to an insecure, withdrawn, "previous" personality picture, bad physical health and an emotional deluded state for the "present symptoms." The remaining factors were analyzed in similar fashion.

Watkins and Stauffacher (29) provided a series of indexes of "deviant verbalizations" based on the content of the protocols and found that such indicators had a reliability of .77 between two raters, and that these indexes distinguished normals from neurotics and the latter from psychotics.

[1] Whether reaction time belongs here is debatable.

Factor analysis, when applied to either the orthodox scoring categories or to the content scales emerges with factors like the following: fluency, generalizing ability, emotionality, imagination, extraversion - introversion, neurotic tendencies. Apparently, what the Rorschach expert does intuitively in evaluating the records of normals and neurotics can be obtained objectively by factor analysis. But it should be noted that direct statistical manipulation of the original Rorschach scoring categories does not lead to significant results unless they are distilled either through the mind of the expert or the hopper of factor analysis.

As for the relation of the Rorschach to changes accompanying psychotherapy, the results are in doubt. One study claims positive findings (21a) and three show negative results—Lord, (20) Carr (6) and Hamlin and Albee (17). The latter found that Muench's indicators of improvement did not hold up when groups exhibiting different levels of adjustment were compared; thus negating the one positive study mentioned.

Barry, Blyth, and Albrecht (3) compared test and retest data on the Rorschach with pooled judgment of patients at a Veterans Administration Mental Hygiene Clinic. Changes in ratings of adjustment level failed to correlate with changes on the Rorschach.

The recent topectomy study (7) offered an opportunity for testing what effect the lowering of anxiety induced by the operation might have on Rorschach performance. Neither orthodox scoring nor anxiety indicators (with the single exception of reaction time) succeeded in demonstrating any changes in the Rorschach performance of the patients, although other psychological tests showed such changes. Psychometric scaling, however, did reveal certain changes and also provided a prognostic indicator. Three pairs of patients were selected, each pair consisting of one individual who decreased in anxiety and one who increased in anxiety after operation. The judgment of loss and gain in anxiety was based on psychological interviewing by means of anchored scaling devices and on the judgment of the psychiatrist. Only those patients in whom the two criteria concurred were selected. The results indicated that perception of movement of whatever variety, regardless of whether it was accompanied by empathy, correlated positively with anxiety, rising when the anxiety level rose and dropping when the anxiety level fell. The degree of tentativeness or insecurity in giving responses also correlated positively with anxiety. The following variables showed only a unilateral relationship to anxiety levels, declining with a decline in anxiety but showing no corresponding rise with rise in anxiety level: sensitivity to chiaroscuro, anatomical responses, perception of animate objects, perception of objects with texture, and degree of self-reference. The following variables also showed a unilaterial but negative relationship with anxiety, showing increases as anxiety fell — accuracy of form perception and degree of congruity of the response. The statistical significance of these differences could be readily established since each patient could be analyzed as a separate sample and the significance of the difference for each patient determined. Only the variables that showed consistent changes from patient to patient were reported.

The fact that the classical Rorschach scoring is not sensitive to changes induced by somatotherapy is an old story. Lord (20) reports a

similar finding in psychotherapy. Perhaps the Rorschach test reflects only basic personality structure. Someone has suggested that the goal of therapy is to arrest diseases into defects and then teach the patient to accept these defects. If therapy consists in nothing more than the acceptance of one's disabilities, no change in fundamental personality is to be expected.

Experimental Studies

Perhaps the most important question that the experimentalist would like to answer about the Rorschach technique is: what is the stimulus, what role does it play, and whether present scoring of stimulus qualities such as Color, Form, Shading and perhaps Movement have definite stimulus correlates. One way of answering this question is to alter the stimulus characteristic to see whether the responses will change correspondingly.

The most revealing study of the stimulus properties of the Rorschach is a still unpublished study by Baughman (5).[2] He set as his goal to differentiate as far as possible between that part of the response which inheres in the stimulus and that which inheres in the responder himself. Since the characteristics of the stimulus are more readily manipulated, he devised a series of modifications of the Rorschach plates so as to reveal the potency of a given part of the stimulus for evoking characteristic responses. He started off with the standard card and eliminated first the hue factor through photographing the standard series in black and white on panchromatic film, retaining all the nuances of the shading or differences in brightness and all the other characteristics of the blot. Then, he removed the shading by making line drawings of the more striking contours within the blot and the periphery. The third modification consisted of blotting out the inside details by making the entire inside of the blot black but leaving the islands of pure white, yielding a silhouette effect. The final modification consisted simply of the periphery or outline of the blot.

While it is difficult to draw up a correspondence between the altered appearance of the card and the specific R o r s c h a c h determinant which is most prominently present or absent, the following tentative suggestions can be made. The cards in which only the periphery was present would tend to accentuate whole responses and form responses. The cards with the inside details would tend to accentuate detail responses and perhaps organization, (Beck's Z). The silhouette cards would tend to accentuate form responses and perhaps tend to suppress white space responses. The achromatic cards and the complete original set are too well-known to require further discussion. The modified cards as well as the original set were administered to a group of 100 veterans, hospitalized for neuroses and character disorders. Each of the five series of blots was given to a group of 20 patients selected randomly which was equated with the other groups on IQ and educational level. Beck's scoring system was employed.

When he compared the records of the various groups, which had been administered variants of the original stimulus cards, he found, instead of the theoretically expected changes, a considerable degree of constancy in the responses. Virtually all of the significant differences were attributable to differences in stimuli which were simply objectively necessary for the oc-

[2] See this Journal, 1954, *18*, 151-164, (5a).

currence of a given category of responses. For example, Detail responses were found uniformly distributed in all the variant forms of the blots except for a drop in the case of the peripheral form series, when the stimulus for D is eliminated. Apparently color and shading are not important for the Detail category. Surprisingly, the M response occurred with significantly higher frequency in the silhouette version, indicating that perception of movement is independent of shading. Categories showing but slight differences from series to series were: R, W, Form level, P, T/R, A, FM, Total time, Diversity of content, and 8-9-10%. Baughman aptly summarizes these findings: "The severest assault upon the stimulus is necessary before significant changes in resulting performances are produced."

Another analysis of the data was made by submitting the protocols including the reaction time data and the responses to experienced Rorschach workers to see whether color and shading shock patterns occurred only in the appropriate series. As a result of this investigation, it is reported quite conclusively that the time latency and response patterns supposedly typical of color shock occur with the same frequency whether color is present or absent. The same was found to hold true of shading and shading shock. A very substantial question is thus raised as to the wisdom of continued use of the shock indicators. Further evidence against the concept of "color shock" is provided by Siipola (27). In a specially ingenious experiment, she concluded that the affinity that color bears to emotion is based on a misunderstanding. Color shock for example is not due to color itself, but to the incongruity between the color and contour of a given blot area. The conflict engendered in the observer will take different paths depending upon the personality of the subject. While Siipola's experiment is not itself conclusive, no statistical verification being given, her explanation of color shock is ingenious, to say the least.[3]

Many of the moot questions in scoring could be answered by Baughman's research. Thus, "Bat" to Card I practically disappears as a response when "shading" and "black" are removed, while "Butterfly" occurs equally frequently in all the modified presentations. Similarly, "Map" occurs only when shading is present. Colored areas which yield anatomy responses practically cease to do so when color is eliminated. Color is of little importance in the response "Bat" to Card II—D32, in "Monkeys" in Card III—D3 and in "Bow-tie" and "Ribbon" to the same card. "Rejection" in this study was much more prominent when Color and Shading were absent, indicating that Form rather than Color or Shading is the primary source of rejection. This study needs to be repeated on groups other than the neurotic, with other scoring systems, and with other types of modification.

The second question deals with the effect of alteration of the state of the subject by means of drugs or hypnosis or shock. These experiments have not yielded very much because of the inexactness with which the psychological correlates of these induced states are known.

The third question deals with the effect of alteration of the circumstances surrounding the test. Prestige suggestions as to the importance of certain types of responses will alter the distribution of the responses in the direction of the prestige. Similarly, social situa-

[3] See paper of Bellak in this symposium.

tion, induced anxiety, etc. have been tried out. Some of the changes expected by Rorschach workers were validated, others not. The important conclusion to be drawn is that standard conditions are required and that Rorschach performance is not as insensitive to external conditions as some workers have claimed.

To summarize our findings thus far, the following facts are seen to emerge from our survey:

(1) Rorschach scoring and sign evaluation has an *a priori* basis which is not always validated by experimentally contrived techniques such as alteration of stimulus, alteration of state of the organism, etc.

(2) Globally, the Rorschach is an apparent success when the Rorschach diagnostician and the clinical diagnostician work closely together.

(3) Atomistically it is an apparent failure.

(4) Content evaluation whether done globally or atomistically is a success.

(5) Factor analysis of atomistic scores consisting of the usual combination of perceptual and content factors, or of content alone, correlate with personality.

What kind of a hypothesis, what kind of a model, could satisfy the above conditions? That is the scientific question before us. Before answering, let us examine Rorschach's technique as an experiment. Experiments must have as their minimal requirements – subject, experimenter, apparatus or stimulus of some kind, a well-defined task, directions for the task, acceptance by the subject of the task, a response made by the subject and recorded automatically or by the experimenter. But that is not all–the most important part is still missing–the hypothesis.

What is the hypothesis underlying the Rorschach experiment – Rorschach never stated it explicitly, but it can be stated as follows:

(1) We perceive in the artificial Rorschach space in the same way we perceive in real space.

(2) The way we perceive in real space is determined by our personality.

Both of these assumptions are impossible to test at this time because we do not know how perception takes place in real space, nor how it takes place in Rorschach space. Gibson (14) has laid the foundations for the experimental determination of these two processes but we still have a long way to go before we can experiment with them. The relation between perception and personality must await the solution of the first two problems. What can be done meantime, and how can we explain the five facts which I have listed previously?

One hypothesis that suggests itself and which I humbly think merits consideration requires a shift of emphasis from the perceptual to the content aspects of the Rorschach. It is true that Rorschach veered away from the content analysis of ink-blots which was so popular with the psychologists of his day and espoused the formal aspects. He states "The content of the interpretations . . . offers little indication as to the content of the psyche." But he may have been wrong, or, may have defined content too narrowly. If we define content as the essential elements of the protocol, and regard it as one would regard any other interview material, and analyze the content, the mystery is solved. Once the perceptual scoring is eliminated, and instead a content analysis of the verbal productions of the subject is made according to such categories as: compulsive thinking,

disorganized thinking, or creative thinking; poverty of ideas or fluency; confabulation or clarity; rigidity or flexibility; contamination or its opposite; perplexity or straightforwardness; rejection or compliance, etc. etc., it will be discovered that such characteristics reveal themselves in the Rorschach the way they reveal themselves in the psychiatric interview. To be sure, the Rorschach interview is a standard interview and may lead to results which the free psychiatric interview can not lead to. But it is still an interview—an interview behind the veil of ink-blots.

This would explain why content of Rorschach protocols is related to personality, whether evaluated globally or in isolated scales, while formal Rorschach factors fail to relate to personality. This would also explain why factor analyses of both formal as well as content factors relate to personality. In the course of the analysis, the content factors affecting the formal scores are teased out—viz.—the kind of mental content which serves to reduce R, disorganize F, disembody C or Sh, or prevent good M from arising in the mental patient and, mutatis mutandis, the kind of mental content which increases productivity and good responses in the normal, reveal themselves in the rotated factors. If this hypothesis be true, we should turn away from the indirect expression of mental content through determinants and location, and begin building scales for analyzing the content of the verbal productions directly. Such a beginning has been made by several workers and if we spend but ten per cent of the harnessed energy behind the Rorschach wheel to studying the interview basis of the Rorschach, we may bring nearer the day when the contradictions that now exist within the Rorschach field are resolved.

New developments in the interview itself are fast turning it into a scientific tool, and since the interview, in the last analysis, is the basis for personality evaluation, no test today can rise above it. If we obtain objective criteria via the interview for the classification and evaluation of personality, perhaps such criteria may serve as a basis for the validation of tests. But without an anchored interview, we float aimlessly in the sea of personality without compass or rudder.

Summary: This review of the failures of the Rorschach technique has found the following outstanding relationships:

(1) Global evaluations of the Rorschach seem to work when the Rorschach worker and the clinician work closely together.

(2) Atomistic evaluation, as well as global, of the content of the Rorschach protocols (as distinct from the perceptual scoring) seem to work.

(3) Atomistic analysis of the perceptual factors is a failure.

(4) Factor analysis of atomistic scores of both the perceptual as well as the content variety, seem to work.

The best hypothesis to explain these four facts is that the Rorschach is an interview and that its correct evaluation, like the correct evaluation of any interview, is dependent upon its content. If we provide scales for analyzing its content, we shall be well on the way towards clarifying many of the present day contradictions and obtain a better perspective on the evaluation of personality.

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The House and Tree In Verbal Fantasy: I. Age and Sex Differences In Themes and Content

SOLOMON DIAMOND, PH.D.
Los Angeles State College

This report is based on content analysis of 300 stories, which were written under the instruction to include three characters: a House, a Tree, and a Person. The method is obviously suggested by Buck's H-T-P technique (1), and we shall assume that the reader has some knowledge of that method, as well as of Machover's related Draw-a-Person technique (7).

SUBJECTS AND ADMINISTRATION

All of the stories were written under classroom conditions. The adult subjects were 96 men and 81 women college students, with the age range in each sex from 19 to above 50, with the medians at about 24. Most of them were education majors enrolled in two sections of a course in Mental Hygiene, about 15 were students in a course in the Psychology of Personality, and 4 women were in a discussion group organized from another course. They were all given what was ostensibly a "test of social intelligence," one part of which had the following instruction:

"Write a story in which there are three characters: a Tree, a House, and a Person. All of these characters should have real personality. In fact, they should all have the power of speech, so that they can communicate their thoughts to one another. Let your story really tell what kind of Tree, what kind of House, and what kind of Person these characters are, and how they feel about each other."

The remaining subjects were 66 boys and 57 girls, pupils in the eighth grade of a public school in a middle-class community in the metropolitan Los Angeles area.[1] They received essentially the same instructions, in writing, as an assignment for a classroom exercise in English composition. These children are described as ordinarily refractory to questionnaire tests which seek to probe their problems, even anonymously, but as having entered enthusiastically and unsuspectingly into this task.

Preference for Persons. Our principal interest will center on the themes which appear in the stories, but it seems advisable to present first certain other quantitative analyses, which will provide a basis for reclassification of some of our subjects. In Table I, the stories are classified according to the kind of Person that appears in the principal human role. Stories written in the first person have been classified as having a Person of the same sex and age group as the author. Stories classified under "Family" are those in which it is not possible to select one of several family members as the principal character.

It will be worthwhile to recall some studies which relate to the problem of choice of Person, for the graphic H-T-P and the Draw-a-Person. Machover (7) states that the choice of a Person of the opposite sex, for the first person drawn, is indicative of confusion in sex identification. Levy (6) says that 87 per cent of adults draw their own sex first, and that of 16

[1] The author wishes to express his appreciation to Mr. and Mrs. Robert L. Cox, whose interest led to collecting these stories.

TABLE I—Choice of "Person"

	Men	*Women*	*Boys*	*Girls*
Same sex as author				
Adult, or no age	61	10	28	3
Old man or woman	7	6	9	5
Boy or girl	13	14	24	15
Opposite sex to author				
Adult, or no age	4	27	1	16
Old man or woman	0	10	1	3
Boy or girl	2	9	1	9
Sex not indicated	7	4	1	3
Family	2	1	1	3
	96	81	66	57
Per cent opposite sex	6	57	5	49
Per cent old	7	20	15	14
Per cent juvenile	16	28	38	42

Null hypotheses rejected:

That men and women are equally likely to choose Persons of the opposite sex (.001).

That men and women are equally likely to choose aged Persons (.05).

That men and women are equally likely to choose juvenile Persons (.05).

That boys and girls are equally likely to choose Persons of the opposite sex (.001).

That boys and men are equally likely to choose juveniles (.01).

That adults and children are equally likely to choose juveniles (.01).

known homosexuals, 13 drew the opposite sex first. These authors make no distinction with respect to the sex of the subject. (In the writer's experience with college students, women are far more likely than men to draw the opposite sex.) Jolles (5), using H-T-P, found that about 20 per cent of boys and girls in elementary school draw the opposite sex, with little difference between the sexes at the younger ages, but a marked reduction in this tendency among the older boys. Weider & Noller (9), using Draw-a-Person, found that 70 per cent of boys and 94 per cent of girls in the third grade drew their own sex first. Granick & Smith (3) found that among college students, about 12 per cent of men and about 35 per cent of women drew the opposite sex first, but in neither sex was there any relation between this response and the M-F score on the MMPI; this led them to question whether the drawings can be regarded as primarily determined by identification or self-portraiture. Giedt & Lehner (2) studied the ages assigned to drawn persons by adult male subjects, and one may judge from their data that the use of aged and juvenile persons in such drawings is rare.

The most striking fact which emerges from the data of Table I is that a very large proportion of the female subjects, and very few of the male subjects, choose Persons of the opposite sex. This suggests the possibility of differentiating among women and girls, according to the sex of the Person chosen. (A similar differentiation among male subjects would be of equal interest, but is not feasible with the present data.) Differences with respect to the use of aged Persons and juvenile Persons also appear.

Reclassification of female subjects. We propose to distinguish, in our further analysis, between those female subjects who, by an objective criterion, indicate an acceptance of their sex role, and those who indicate a rejection of it. With this intent, we shall establish

groups to be designated as Gf, Gm, Wf, Wb, Wf', and Wm, defined as follows:

Gf includes all girls who have used feminine or "family" Persons, as classified in Table I. Gm includes all those having male Persons, and those in which the sex of the Person is not indicated, except where the story is written in the first person.

Wf and Wm are similarly defined, except that the latter group does not include women who use boys as Persons. These constitute the separate group Wb. Wf and Wb together constitute Wf'. In other words, we regard the preference for a boy-person as constituting a rejection of the feminine role when it occurs in a story written by a girl, but not when it occurs in a story written by a woman. The justification for this difference in treatment will be given in the next section.

Some sex-linked content characteristics. For each story, the following determinations have been made:

(a) Is the concept of *beauty* present, in the use of such words as beautiful, lovely, graceful, shapely, pretty, handsome, etc?

(b) Is there reference to *building*, whether of the principal House or any other?

(c) Is there any intimation of the Person's *family*, as by mention of a parent or child?

(d) Is the House given *prior mention*, as compared to the Tree? (For this purpose, no attention has been given to priority in the mere listing of the three characters in an opening sentence, without qualifying characteristics, as if echoing the instructions. When the first mention of either House or Tree is made as part of a speech by the other of these characters, the speaker is credited with prior appearance.)

In Table II, the presence or absence of each of these content characteristics is indicated, for the stories written by each group of subjects, as defined in the preceding section. The last column of the Table gives probabilities based on chi^2 values computed independently for each row. The population is non-homogeneous with respect to each of these content characteristics, as shown by these probabilities. However, it is not possible to establish a significant difference between Men and Women, taken as total groups, with respect to each of them. These total groups do not differ significantly with respect to use of the concepts "building" and "family." However, the sub-groups Wm and Wf are sharply differentiated in these categories, as well as with respect to prior mention of the House. In each case, Wm more closely resembles Men. Thus, it appears that the difficulty in distinguishing between Men and the total group of Women, on these content characteristics, results from the heterogeneity of the Women, and that this difficulty is largely removed when we discriminate between those women who choose male Persons and those who choose female Persons. Furthermore, we

TABLE II—Presence/Absence of certain content characteristics, and the probability that the population is homogeneous with respect to each.

	Men	Boys	Wm	Wb	Wf	Gm	Gf	P
Beauty	24/72	15/51	18/23	4/5	16/15	8/23	13/13	.01
Building	22/74	9/57	14/27	0/9	2/29	3/28	3/23	.01
Family	15/81	12/54	7/34	4/5	12/19	6/25	9/17	.05
Prior House	36/60	37/29	19/22	9/0	20/11	13/18	16/10	.001

can readily see that throughout the Table, Wb closely parallels Wf, showing its affinity to the latter group rather than to Wm. Therefore, as already stated above, we shall combine Wf and Wb as Wf', the group of women whose choice of a Person does not indicate rejection of the feminine role. It may be admitted that this has been, in fact, a *post facto* justification, which was initiated by awareness of the "motherly" content of all the Wb stories. However, it is important that this procedure can be justified by criteria that are independent of the themes themselves, to the study of which we shall now turn.

MAJOR THEMES

After a preliminary study of all the stories, the writer prepared a set of instructions for judges, which included definitions of certain recurring themes. These definitions are reproduced here, since they can also serve the reader as a synoptic statement of the type of content commonly met in the stories.

Complaint. Expression of resentment by House, Tree, or both, against neglect or abuse, or unfair disadvantages relative to the Person. Such stories generally have a misanthropic flavor, placing the person in an unfavorable light.

Destruction. One or more of the principal characters suffers death or serious injury. The tone may be tragedy, pessimism, or cynicism.

Escape. There is a threat or apprehension of serious injury, which fails to materialize or is at least minimized in its effect. Included here are stories in which death or injury does overtake would-be malefactors, and others in which injury is accepted in a spirit of martyrdom, to prevent harm befalling a loved figure. The main point of the story is "escape" from threat.

Friendship. Friendly relations, motivated by a desire for fun or by positive feelings between the characters, who are essentially equal as companions, none being particularly dependent as compared to the others. Compare with *Harmony, Loneliness, Maternal,* for other types of relationship involving more than friendliness.

Harmony. The characters live together cooperatively, rendering mutual service. The tone of these stories is often moralistic. The relationship is often utilitarian, a kind of "social contract" based on good sense rather than an expression of warmth.

Inspiration. The Person's life is in some sense redirected, or re-energized, through his or her perception of the "spirit" of the House or Tree. (This category does *not* include stories in which the misbehaving person is "taught a lesson" by a complaining House or Tree.)

Loneliness. One or more of the characters expresses a need for companionship, or a feeling of insecurity based on introspective self-concern. A "happy ending," in which the insecurity is removed, does not change the classification, which is based on the need expressed in the theme.

Maternal. The House and/or Tree take delight in their sheltering function. If there is reciprocity of service, it does not seem to be based on an economic exchange, but on spontaneous desire to give warmth and love, rather than to receive care.

Reminiscent. Reminisence of past events.

Superficial. Stories in which the relationships seem merely casual, the conversation mere everyday chit-chat.

Valuative. Evaluative discussion of the relative merits of the differ-

ent characters, usually with a competitive or boastful orientation. A final moralistic resolution of this conflict does *not* suffice to place such a story in category *Harmony*, where competitive spirit is absent.

Conflict. There is a conflict of interest (not mere boastful rivalry) between House and Tree, such that the welfare of one is threatened by the other.

Miscellaneous. Stories that do not include any of the above themes.

The 300 stories were prepared in typewritten form, with errors of spelling and many errors of punctuation eliminated, and without identification except by number. They were assembled in 15 groups of 20 each, each group containing six or seven stories by men, five or six stories by women, four or five stories by boys, and three or four stories by girls. Six graduate students each judged 100 stories, or five groups, in an arrangement such that each judge had one group in common with each other judge. There were thus two determinations of major theme for each story. As would be expected, the different judges exhibited individual preferences for certain themes. One judge who made excessive use of the Inspiration category, as compared to the others, was asked to reread these stories, with careful consideration of whether some of them might not better be placed in other categories. Another judge who made excessive use of the Miscellaneous and Superficial categories was similarly asked to reclassify the stories so judged, bearing in mind a phrase of the instruction, that the definitions of themes were "to be interpreted broadly, so that as few stories as possible shall be classified as 'miscellaneous'." The category Reminiscent was used much more rarely than had been anticipated, and each judge was asked to reclassify any story he had placed in this category, thus eliminating it from the tabulations. However, many significant differences between the judges remain. Thus, one female judge finds 26 stories of the 100 she read have maternal interest as their principal theme, while two of the male judges find only seven such stories each; one male judge finds eleven stories which have conflict as their principal theme, while another finds none. These differences would make an interesting study in themselves, but it does not seem possible to discuss them without violating the deserved anonymity of the judges. They are mentioned here only as a factor which necessarily reduces the likelihood of coincident judgments by pairs of judges on each story, that is, as perhaps the major factor in reducing the reliability of judgments. This general problem is the subject of a recent article by Hammer & Piotrowski (4).

Table III shows the distribution of the 300 pairs of judgments, each story being entered once. In this and subsequent tables, the categories have been ordered so as to make more evident the relationships which are shown by these coincident judgments. For 129 stories, the two judgments were the same. For 66 others, the two themes selected are immediately adjacent as ordered in this Table, while for 48 more there is one intervening position. Thus 243 of 300 cases fall in 33 of the 78 cells of this Table. A formal statistical test would be superfluous to show that the categories as established are meaningful. However, examination of the Table also shows the need for better definition of some of the categories, particularly to differentiate Harmony from Valuative on one hand and Maternal on the other.

TABLE III—Coincidence of classification of each story by two judges, according to major themes

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Destruction	17	3	5	0	3	0	0	2	0	2	0	0
2. Conflict		4	4	4	1	0	0	0	1	0	1	0
3. Complaint			23	9	2	2	2	2	1	1	1	0
4. Valuative				11	3	9	2	3	0	1	1	0
5. Escape					9	7	2	4	1	4	0	0
6. Harmony						9	12	18	0	4	2	5
7. Friendship							15	14	1	2	3	5
8. Maternal								13	4	5	0	1
9. Inspiration									4	3	1	0
10. Loneliness										18	6	1
11. Miscellaneous											2	1
12. Superficial												4

TABLE IV—Frequency of occurrence of major themes, as determined by an average of two series of judgments.

	Men	*Boys*	*Wm*	*Wf'*	*Gm*	*Gf*
Destruction	12	6	1.5	1	2	2
Conflict	5.5	1	1.5	1	1	1
Complaint	19.5	10.5	4.5	1	1	1
Valuative	11.5	3.5	4.5	1.5	3	3
Escape	2.5	6	3	2	7	2
Harmony	11	9.5	6.5	3.5	3.5	4.5
Friendship	7	7.5	2.5	13	2	4.5
Maternal	8.5	9	6.5	9	1	5.5
Inspiration	8	0.5	2	0	0.5	0
Loneliness	6.5	4	6.5	7.5	5.5	1.5
Miscellaneous	3.5	2.5	0.5	0.5	2.5	0
Superficial	0.5	6	0.5	1	2	1
	96	66	40	41	31	26

Null hypotheses rejected (by chi² tests of four-fold tables, without correction for continuity, because the observed data are not restricted to integral amounts):

That male and female subjects are equally likely to use the Complaint theme (.001).
That male and female subjects are equally likely to use the Destruction theme (.05).
That male and female subjects are equally likely to use the Loneliness theme (.001).
That Men do not differ from other subjects in use of the Inspiration theme (.01).
That adults do not differ from children in use of the Escape theme (.02).
That Wm and Wf' do not differ with respect to the combined use of the "masculine categories," Complaint, Destruction, and Inspiration (.05).
That Wm and Wf' do not differ with respect to the combined use of the affiiative categories, Harmony, Friendship, and Maternal (.05).
That Gm and Gf do not differ with respect to the combined use of these same categories (.01).

PREFERENCE FOR THEMES

The 600 ratings were arranged in two series of 300 each, with each series containing a "split half" of the judgments made by each judge within each of the groups he read. Within each of these series separately, the relative frequency of each theme was determined for each major group of subjects, i.e., Men, Women, Boys and Girls. The resulting frequency tables were quite similar, differing as they did only by chance, and each separately gave rise to a chi² total leading to rejection of the null hypothesis, for the table as a whole, at a very high level of confidence. The two series of judgments were then pooled, by averaging the entries in similar cells.

Table IV gives the frequency of occurrence of the major themes, for each group of subjects, as determined by averaging the two series of judgments. In order to compute a chi^2 value for this Table, we have merged certain rows and certain columns, to avoid having too many cells with very small expected values. Specifically, we have merged Gm and Gf into one column, and we have merged the categories of Conflict, Inspiration, and Superficial with Miscellaneous, as one "greater miscellaneous" row. The resulting table has 9 rows and 5 columns, or 32 degrees of freedom. It yields a chi^2 sum of 61.43 ($P<.01$). The major contributions to chi^2 arise from the following circumstances: in the category Complaints, Men have an excess, Wf and Girls a deficit; in the category Escape, Men have a deficit, Girls an excess; in the category Friendship, and to a lesser degree in the related category Maternal, Men have a deficit, Wf an excess. As a group, Wf makes the largest contribution to chi^2, while the contributions of Wm are quite moderate.

There is also appended to the Table a list of null hypotheses which are rejected on the basis of chi^2 tests of appropriate four-fold tables, constructed from the same data. For these tests, the customary correction for continuity has been deemed inapplicable, since the observed values are not limited to integral amounts, because of the averaging procedure by which they were obtained. It should be pointed out, however, that the probabilities given are based on conventional "two-tailed" tests, whereas the nature of these hypotheses is such that one-tailed tests, which would approximately halve the probabilities, would be justified.

Recurring Plots

Up to this point, we have dealt only with those results which have lent themselves to statistical treatment, and we have thus been limited to dealing with categories, whether of subjects or of stories, which were not too small. Ultimately, however, our interest is in the single individual, and in the unique fantasy production which helps us to understand him. Group differences, and statistics on major themes, are only of value as providing the background against which we can judge the meaning of the single story which interests us at a given time. However, between the individual story and the common theme there is another level, which we shall call here, for convenience, the recurring plot: the story which is found to recur several times, not often enough to permit statistical comparison of groups, but still often enough to impress us as a "type story." Such stories interest us especially because their uniformity supports an interpretation of the plot in symbolic terms. We shall give a brief synopsis of several such plots.

One of the most striking is the "learnt his lesson" story. In this story, the House and Tree complain to each other about the neglect and abuse which they suffer from the Person. They then conspire to "teach him a lesson," usually by withholding their favors of fruit and shelter, sometimes by direct scolding. The Person is often frightened, always contrite, and resolves to behave himself better thereafter. We can feel sure that the author of such a story has had strong conflict about the problem of surrender to parental authority. Boys write five such stories, and men ten; girls write none, and

women only one that conforms strictly to the outline given above. However, women write two others which represent minor modifications, and as such give interesting expression to the feminine character. In one, a little boy is gently punished by the Tree, to stop him from tormenting the House by throwing his ball against it. Obviously, this is not the child's authority problem, but the mother's! In the other, the Tree and House conspire to teach an old man to be more friendly, but they conspire to do this through a demonstration of love and kindness, not through punishment.

It will be recalled that the concept of "building" occurs often in stories by men, and in group Wm, but rarely in Wf. It is interesting to observe that three of the Wm stories in this category have a common plot: a man selects a Tree from which to build his House, the Tree asks to be spared, the man explains the virtues of a House, and the Tree then, or the House after the transformation has occurred, expresses contentment with its fate. This seems to be a clear symbolic expression of the woman's abdication of an original masculine protest.

Another interesting theme, which usually appears as a minor rather than principal plot, is an expression of worry by the Tree about its loss of leaves, or its uncertainty about bearing blossoms or fruit, which is met by reassurance from the House. This occurs several times in stories by both boys and girls, and seems to be an expression of adolescent concern about physical maturation.

Castration symbolism. We have at several points made the assumption, which we assume that the reader has willingly followed, that the Tree will more often be used as a masculine symbol, and the House as a feminine symbol. It is rare that feminine sex is specifically ascribed to either of these characters, although this does happen more often with the House. However, there can be little doubt that by and large they tend to have the expected qualities. A masculine-seeming House is certainly a rarity. A feminine-seeming Tree is more common, but still relatively less so than the sturdy masculine-seeming Tree. (Masculine House and feminine Tree occur together in one of those few stories written by a man with a female Person.) If we are prepared to accept the fact that the Tree will often be used as a phallic symbol, then we must expect that the vicissitudes of the Tree will often express castration anxiety. It is a fact that the Tree is far more often exposed to danger than either the House or the Person. Furthermore, the population is definitely non-homogeneous with respect to this content. Table V shows the incidence of "Trees in danger" in the various groups. In deriving a chi^2 sum for this Table, we have combined Wb and Wf, and also Gm and Gf, to avoid small expected values. The result (14.38, with 4 degrees of freedom) corresponds to a probability less than .01. The major contributions to chi^2 arise from the circumstances that girls are more likely to use this content, and Wf' are less likely to do so. This outcome is consistent with the

TABLE V—Incidence of "Trees in Danger"

	Men	*Boys*	*Wm*	*Wf'*	*Gm*	*Gf*
Present	9	12	8	1	10	5
Absent	87	54	33	39	21	21

view that these stories are an expression of castration anxiety.

Many of these stories also enter the Escape category, which was used in our earlier analysis of major themes. It is a fact, as noted there, that boys and girls characteristically develop their stories in such a way that the danger to the Tree is averted, while adult subjects are more likely to permit the catastrophe to occur.

There is a notable small group of stories by boys in which the danger to the Tree is averted through violent retaliation against the threatening Man. These may be regarded as expressions of unresolved Oedipal hostilities directed against the father. This theme of violent retaliation does not occur in the stories by other groups, except that in one story by a girl, in which a young apple tree has been told that it will be turned into firewood if it does not produce fruit within the week, the timely and miraculous appearance of its golden fruit is immediately followed by a bolt of lightning which destroys the evil mistress and House.

There are several stories by girls in which the Tree takes a phallic role without any castration threat. In one, the Tree announces itself, to a boy, in a dream, as "the root of life;" in another, a boy "wished he were a Tree" – only to ask the House, a few sentences later, how it seemed to have people living inside one; in a third, a girl who has been warned by her parents against entering the forest, and who nevertheless went there with her boy-friend, was frightened by the talking Trees. It is also appropriate to mention here that the reference to "forest" is more frequent in stories by girls than in those of other groups ($P < .05$), which suggests that they are often thinking in terms of a masculine environment rather than a masculine identification.

Id and Superego. The Tree and the House have multiple potentiality as symbols. They are father and mother; they are masculine and feminine aspects of the self; they are also, in many stories, Id and Superego. The Tree offers itself readily as a symbol for "natural force," and the House as a symbol for socially established rules of conduct. Perhaps the most striking instance of this sort is in the story (by a woman) of a man who "imagined he had a house and a tree living inside of him," with the Tree objecting that the House impeded its growth, while the House insisted that it was needed to hold the man straight. There are a number of other stories in which the Tree and the House represent conflicting ethical standards, with the Tree standing for free development of the individual, and the House for conformity to social expectation.

Summary and Conclusions

College students and eighth-grade students were asked to write a story whose characters include a House, a Tree, and a Person, all gifted with speech and giving expression to their feelings about each other. Quantitative analysis of the results led to a number of conclusions, relating to group differences in the preference for different kinds of Persons (see Table I), group differences in respect to other content characteristics (see Table II), and group differences in respect to the themes of stories (see Tables IV and V). Examination of certain recurring plots gives further support to the view that the House and the Tree have certain typical, though not invariable, symbolic roles.

The writer has refrained from offering lengthy excerpts, which would illustrate in greater detail the projective possibilities of this instrument, which might be called the verbal H-T-P. Such illustrations would serve little purpose unless they were accompanied by clinical data about the subjects. Such data are available in a fair number of cases, where the students have been seen by the writer for personal counseling, but they would be difficult to present without risking violation of the anonymity of the individuals involved. Suffice it to say, that in the writer's experience the use of this technique has been clinically rewarding, and professional friends who have used it independently, under clinic conditions, have confirmed this judgment.

If the technique is to attain maximum usefulness, there is need for more careful study of the symbolic roles of the House and the Tree. Furthermore, this is a problem which has great theoretical interest, aside from possible clinical application. The writer plans to execute studies in which some subjects will be asked to write about a Tree and a Person, others about a House and a Person, in the hope that the simpler relationships will lead to principles that can be applied in interpretation of the more complex stories. It need hardly be added that results from any investigations with the verbal H-T-P should be studied in relation to experience with the graphic H-T-P (which includes verbal inquiry aspects), and with the Draw-a-Person technique, with the expectation that each of these methods can help to illumine the others.

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The Effects of an Experimental Set to Simulate Abnormality on Group Rorschach Performance[1]

MARVIN J. FELDMAN, PH.D.
AND
JAMES GRALEY
University of Buffalo
Educational Therapy Center, Richmond, Va.

An important feature of any personality test, including projective techniques, is the extent to which the test is subject to conscious alteration. Obviously the reliability of a test may be impaired to the extent that momentary test taking attitudes influence test results. The question of whether or not a projective technique can be consciously changed is not, however, a simple "yes" or "no" proposition. Rather it seems pertinent to inquire, (a) what are the limits of conscious alteration on various projective tests, (b) what experimental "sets" or conditions will elicit the greatest changes, and (c) what types of subjects can alter their performances most freely.

The present study was designed to test the effect of a "set" to simulate abnormality on the Group Rorschach Test by normal college students. The answers to three general questions were investigated by this study:

1. Would this set produce changes of any kind?
2. Would changes be in the direction of greater maladjustment?
3. Would skilled Rorschach workers be able to distinguish faked from normal protocols?

HISTORY OF THE PROBLEM

Before turning to the study proper, it might be noted that several studies along similar lines have presented equivocal findings and conclusions. Fosberg (8) concluded that the Rorschach could not be consciously faked. In his study, college students took the Rorschach three times; once under standard conditions and then with sets to give their best and worst impressions. Reliability coefficients were found to be high for all three conditions; the lowest correlations were found in the formal content categories. It should be noted, that Cronbach (5) has stated that the type of statistic used by Fosberg is likely to yield spuriously high correlations while masking real differences at the same time.

On the basis of a similar Rorschach study, also with college students, Carp and Shavzin (4) arrived at different conclusions. Their subjects took the test twice with sets to give a "good" and a "bad" impression. They found that at least some subjects could alter their responses in keeping with the sets.

Both of these studies restricted their analyses to the formal scoring categories on the test. It is the purpose of the present study to attempt to clarify, if possible, the contradictory views presented in the previous studies, as well as to determine if certain informal content aspects of the test are effected by the experimental set.

METHOD

The standard Rorschach test was administered in group form. A five by six foot image was projected

[1] This is a revision of a paper read at the Eastern Psychological Association meeting in Boston, Massachusetts in April, 1953.

on a white beaded screen. One group (hereafter to be designated as pretest I and posttest I) took the test twice, two weeks apart. The pretest was taken with standard instructions, the posttest with instructions to simulate abnormality. The second group (hereafter designated as group II) took the test only once with the set to simulate abnormality. This experimental design, of course, offered some check on the effect of test experience in carrying out the set.

The standard instructions were those suggested by Klopfer (11). The experimental set, amounting to an invitation to produce a psychotic record, was as follows:

"The purpose of this test is to find out whether or not you can malinger or fake your responses so as to give an impression of abnormality. Try to respond as you think a very emotionally disturbed person would. Give the worst possible impression of your personality, so that a psychiatrist would have trouble in distinguishing your record from that of a person in a mental institution. Another example; take the test as if you wanted to be disqualified from military service for psychiatric reasons."

Administrative procedures recommended by Harrower-Erikson (9) were followed. In the performance proper the subjects were allowed three minutes per card to record their responses. The responses for each card were recorded on a separate page. A modified inquiry was then used. After being properly instructed, the subjects were asked to locate their responses on a location chart; the slides being shown again for a minute apiece. Then the subjects were instructed about determinants, and were asked to check on a determinant chart for each response whether movement, texture, form or color was used. At the conclusion of the test, the subjects were asked to record how they attempted to feign abnormality.

SUBJECTS

The subjects were drawn from two introductory psychology classes at the University of Buffalo. Almost 100% participation was obtained. None of the subjects had ever received any formal instruction on the Rorschach Test. Group I contained 30 subjects; group II contained 42 subjects. As shown in Table I, the two groups were comparable in age and education. The second group, however, contained a somewhat higher percentage of women, 24% compared with 13% in the first group. It seems safe to conclude that the two groups were sufficiently alike for the purposes of this study.

SCORING THE PROTOCOLS

In the main, Klopfer's (11) method of scoring determinants was followed, while the Hertz manual (10) was consulted for location scores, form level and populars. The inquiry charts were used only as a guide in scoring determinants,

TABLE I—Personal Characteristics of the Groups

Group	Sex		Mean Age	Mean Year in College
	M	F		
Experimental Group I (N=30)	26	4	24.8 (N=16)*	2.0 (N=15)
Experimental Group II (N=42)	32	10	20.5 (N=35)	2.1 (N=33)

* Not all subjects recorded personal data, hence the different numbers in parentheses.

in as much as some subjects were indiscriminate and some too cautious in checking the determinants supposedly used. Hence the junior author who scored all of the protocols had to use his judgment in scoring some determinants not listed, and excluding other determinants which were checked, in keeping with conventional methods of Rorschach scoring. No determinants were scored additionally; hence a single response might be credited with several main determinant scores.

To check on the reliability of scoring, a random sample of 199 responses was drawn utilizing one card from each protocol, and a second Rorschach worker independently scored the determinants in this sample set of responses. The inter-rater agreement was quite high as shown by a contingency coefficient of .80, using only scores present in sufficient number (excluding *k, K, FK, C',* and *c*). Thus it seems that the scoring in this study was fairly reliable.

Treatment of the Data

The following types of analyses were conducted in attempting to elucidate the major questions posed for this research:

1. The groups were first compared on the basis of both formal scores and qualitative aspects of the test to determine if any changes were produced by the set.

2. The groups were compared by means of the Munroe Check List to determine more objectively if changes produced by the set were in the direction of greater maladjustment.

3. Judges were asked to sort the protocols into faked and normal records to determine if faked records were distinguishable from normal ones.

Analyses were made of those cases who apparently were unsuccessful in complying with the set. Also the statements of the subjects about their methods of faking were analyzed for whatever additional light this data might reveal about the process of simulating abnormality.

Results

Formal aspects. Thirty-five scoring categories which had sufficient range and enough cases in each category including the usual location, determinant, content, and ratio scores were selected for comparison between the normal and experimental set groups. Following Cronbach's suggestion (5) chi-square tests of significance using the median of the combined groups as a cutting score were used to overcome the problem posed by the extreme skewness of most Rorschach scores. Because of the size of the samples, Yates' correction for continuity (6) was applied to all chi-square tests. As shown in Table II, of the 35 significance tests, 14 differed significantly between pre- and posttest I, while eight differed between pretest I and group II at the 10% level.[2] According to tables compiled by Wilkinson (16) the number of tests attaining significance in each set of comparisons is well beyond chance expectation. Hence it can be concluded that the experimental set produced some changes in Rorschach performance. An inspection of the data shows

[2] The assumption is made that since Groups I and II are comparable groups, the scores of pretest I serve as an estimate of what the scores of Group II *would have been* had they taken a pretest. Hence, pretest I scores serve as a baseline to evaluate the results of the experimental set on Group II. For a fuller account of the rationale of a similar control group design, see Solomon (15).

TABLE II—Significant Differences Between Groups on Formal Rorschach Scores Using Chi-Square Tests

Score	Pretest I vs Posttest I X^2	Pretest I vs Group II X^2	Posttest I vs Group II X^2
R	*7.14***†		11.08**
W	*4.39**		7.59**
D			7.38**
M	*2.69*		
m	2.69	4.05*	
F	*13.10***	2.65	12.34**
F%		2.80	6.93**
F+%	*3.28*		
Sum Fc,c,C′			4.31*
FK+F+Fc/R		2.81	4.70*
FC	*6.82***		
Sum C	*2.83*		
FC>CF+C	*8.22***	*2.80*	
CF+C		2.66	
Sum color:			
Sum achromatic	*4.92**		
P	*20.08***	14.99**	3.64
A	*9.72***		11.43**
A + Ad	*13.10***		10.71**
Sex-At	5.30*	3.02	
Obj.			3.27

Note—no asterisk indicates .10 level, * .05 level, ** .01 level
† Figures in italics indicate in column 1 that pretest I scores are higher, in column 2 that pretest I scores are higher, and in column 3 that posttest I scores are higher.

that determinant scores changed the most, formal content categories next, and location scores hardly at all. Also the subjects with previous test experience effected more extensive changes than group II subjects, who took the test only once with the experimental set. The results are somewhat obscured, however, by the fact that the average number of responses in posttest I was significantly lower than both pretest I and group II; the latter two groups, incidentally, having almost identical average number of responses. Table II also shows that R, W, F, A, and A+Ad differed not only between pre- and posttest I, but also between posttest I and group II in the same direction. It seems likely, therefore, that these scores were affected as much by the decrease in average number of responses as by the experimental set.

The results of the first analysis also bear on the direction of change. It would seem that those scores in the experimental set groups, which were consistently different from pretest I, would be most useful for this purpose. Both set groups had significantly more *m*, *CF+C FC*, sex anatomy responses, and significantly fewer populars than pretest I. In addition, the set group records contained numerous *K*, Blood, Fire, and Explosion-smoke scores which were virtually absent in pretest I. The latter scores, however, were too few in total number to be subjected to meaningful statistical tests. The picture taken as a whole, indicates that the set groups produced many diffuse anxiety signs, showed signs of freer emotional expression, and avoided the popular in preference to the atypical in re-

sponse to the instructions, and their protocols (at least from the standpoint of formal scores) were most similar to those of anxiety hysterics. Very few protocols resembled psychotic records. Thus from the analysis of formal scores, it might be concluded that the subjects were at least partially successful in changing their Rorschachs in the direction of greater maladjustment.

Qualitative aspects. All records were further inspected for the presence of 23 qualitative content signs mentioned in the literature (1, 11, 14) as being characteristic of various clinical groups; e.g. aggression, self-reference, sexual references, confabulation, paranoid content, contamination, etc. The results in this study are rather striking. There is a virtual absence of these signs in the normal records, pretest I, and a profusion of certain of these signs in both experimental set groups. Signs present to a significant extent in the set groups were self-references, aggressive, and sexual references—the latter two, often in combination. Other signs used with some frequency in the set groups but absent under normal testing were symmetry remarks, queer or absurd content, confabulations, dysphoric, anal, and expressions of personal feelings. More of these qualitative signs were present in the records of posttest I than in group II. It might be noted, however, that the subjects failed to produce such psychotic signs as paranoid content, position responses, perseverations, contaminations, and color naming.

These findings tend to corroborate the analysis of the formal scores. The set groups produced qualitative signs frequently found in clinical records, while the signs indicative of the most severe pathology were not given. Further, it would seem that previous test experience was helpful in producing these qualitative features. In contrast to most clinical records, a characteristic flippancy was evident. Frequently peculiar responses were given to the first card or first few cards, and the responses to the later cards appeared to be more normal. In clinical practice, psychotic patients frequently begin the test with cautious popular responses, and only gradually reveal their autistic and bizarre thought processes.

The Munroe Check List. This technique affords a relatively objective measure of adjustment level as shown by Munroe's (6) study, using this method to assess the adjustment of college students. The Check List takes into account many aspects of the Rorschach combined into a single score and seemed well suited for the purpose of the present study. Since the distribution of Check List scores was fairly normal, *t* tests were used to compare the groups. As shown in Table III, both experimental set groups had significantly higher scores in the direction of maladjustment than did the normal group. Previous

TABLE III—Comparisons among Groups on the Munroe Check List

Group	Mean	SE	r	t	p
Pretest I (N=30)	9.73	3.31	—.32	4.41	.01
vs posttest I	14.47	4.27			
Pretest I vs	9.73	3.31		3.82	.01
Group II (N=42)	13.0	3.80			
Posttest I	14.47	4.27		1.48	.10
vs Group II	13.0	3.80			

test experience again seemed relevant to the task, as posttest I scores were somewhat higher than group II scores. Thus, these findings were quite consistent with the previous analysis of individual scores. Of some interest is the −.32 correlation between pre- and posttest scores on the check list. This finding suggests that the better adjusted students were more flexible in complying with the experimental set.

Munroe found some degree of maladjustment to be present in most students who had more than ten checks. If this criterion is accepted in the present study, 15 pretest I subjects, 27 posttest I subjects, and 32 group II subjects would have ten or more checks. While a large majority of the set groups would thus be considered maladjusted; a fairly sizable percentage of the pretest I group would likewise be considered maladjusted. The present finding is not unusual, since Blandon and Landsman (3) found that 40% of a normal sample of 105 college students had ten or more checks using the Munroe Inspection Technique.

The Sorting Experiment. Four skilled judges attempted to make a blind sorting of all protocols into faked and normal groups. Two judges were told the proportions in the faked and normal groups. The other two judges were not so informed. Table IV shows that, using chi-square tests of significance, all four judges achieved an accuracy in sorting above chance expectation; the per cent of correct placement ranged from 65 to 83. Both informed judges did better than the uninformed judges, but the experimental design does not permit an unequivocal answer as to whether greater knowledge or skill was involved in producing the difference. Many more errors were made in sorting group II records than in either of the other two groups; adding another bit of evidence to support the conclusion that test experience helps a subject carry out the task of faking. Thus, from findings based upon a more global type of analysis, it is again apparent that these Rorschach-naive subjects could change their responses to the extent of making their records discernible from those produced under standard conditions.

Test Misses. Of the 72 records produced under directions to simulate abnormality, 11 were judged to be normal by at least three judges. These "unsuccessfully faked" records all came from group II. These 11 records were compared with the balance of group II records to determine what factors might have led the judges astray. To a certain extent it would seem that these "test misses" had attempted to comply with the instructions, for their average score on the Munroe Check List was the same as the rest of the group. There

TABLE IV—Accuracy of Judges' Ratings on 102 Faked and Normal Records

	Judges							
	A		B		C		D	
Records	Judged Normal	Judged Faked	Judged Normal	Judged Faked	Judged Normal	Judged Faked	Judged Normal	Judged Faked
Normal	21	9	19	11	25	5	24	6
Faked	9	63	11	61	23	49	30	42
X^2	33.72**		23.53**		22.45**		13.55**	

** .01 level

were, however, certain marked differences. The chief difference was the failure of these "test misses" to produce the qualitative signs so characteristic of most of the faked records. There was also a somewhat higher proportion of women in these 11 cases than in group II as a whole. Another interesting finding was a median F% of 59 for these 11 cases compared with a median F% of 36 for the remaining cases. It can only be conjectured that these subjects were indeed the more rigid and inhibited members of the group who couldn't comply with the set in such an unfamiliar and unstructured task. This would seem to complement the previously mentioned finding on the Munroe Check List, that the better adjusted subjects were able to achieve more maladjusted scores. With one or two exceptions, these 11 subjects either failed to state their basis for faking, or frankly admitted that the task was very difficult. Almost all other subjects stated several ways in which they attempted to carry out the set.

Three pretest I records were rated as being faked by three or more judges. There were unfavorable features in all of these records. Each contained a few bizarre responses, e. g. "a brain after a hangover", and poor form responses as well as several of the qualitative signs. It would not, of course, be surprising to find a few highly disturbed individuals in an unselected sample.

Subjects' Statements. It is of some interest to examine the conscious approach of these naive subjects to this task for whatever light it might throw on the process of dissimulation. The subjects' comments were classified into the following categories (listed in order of frequency): (a) avoiding the normal response; (b) emphasizing sex; (c) mentioning symptoms of maladjustment; (d) using a specific mental disorder as a guide; (e) using an unspecified mental disorder as a guide; and (f) stressing aggressive and gory concepts. We do not have sufficient information to know how subjects attempted to implement their internal sets, i.e. what did it mean to a subject when he thought of a specific mental disorder in carrying out the examiner's set. It is apparent, however, that the subjects' statements were not always an accurate guide to their actual approach to the task, for as discussed previously, the faked records were replete with self references and sexual and aggressive responses. On the basis of the subjects' statements, it would seem that consciously they attempted to alter the content and to elaborate the content in a bizarre manner. Thus we might not have expected the formal aspects of the test to change as much as was actually the case, with the exception of the popular score which was apparently consciously avoided.

Summary and Discussion

The results of this study seem fairly consistent in answering the questions posed initially. It would seem that when bright normal subjects are given a set to stimulate abnormality on the Rorschach, they can alter their records both quantitively and qualitatively. Further, the changes produced are in the direction of greater maladjustment, and judges can distinguish the faked from the normal records. Although the faked records have more in common with neurotic than psychotic records, a certain flippancy in responding is evident which is not often encountered in actual clinical records.

The results of the present study then do not seem to be consistent with Fosberg's conclusion (8) that the Rorschach cannot be faked. It should be noted, however, that in Fosberg's study, the content categories had the lowest reliability; and somewhat similar results were obtained in the present study, since most of the significant changes appeared in the qualitative content. Fosberg used the individual form of the test which might have inhibited his subjects somewhat in carrying out the set, but as suggested previously, his statistical tests may not have been the most appropriate for revealing differences, and he didn't analyze the qualitative features of the content.

The results also seem to indicate that the better adjusted subjects complied most readily with the set, while conversely the more rigid subjects experienced the most difficulty in altering their records, particularly in failing to give qualitative indices of maladjustment. This finding may have practical value in that extrapolating from this data, it might be assumed that clinic patients would have more difficulty in consciously altering their Rorschach performance than normal subjects. This same conclusion was suggested by Fabrikant, (7) on the basis of comparing normal and clinical subjects in a "set" experiment on the Rorschach.

It would seem that previous test experience is helpful although not absolutely necessary in carrying out the set. The differential findings in the two set groups does, however, point up the desirability of the present control group design. This same design might be used with profit in many Rorschach studies which necessitate pre- and post-testing.

It would seem that this predominately middle class group of subjects conceive of severe personality disorders as being characterized by the uninhibited expression of sexual and aggressive content. Further studies would be necessary to determine what genetic factors have contributed to this perception of abnormality, and whether the same projections about abnormality would be found in other socio-economic groups.

While the present study cannot be construed as a test of malingering, it is of some interest to compare the present findings with results from studies of actual malingerers. Benton (2) and Rosenberg and Feldberg (13), report such studies in military personnel. Both studies found that malingerers gave few responses, were inconsistent in responding in that they often failed easy plates, and gave few populars. Rosenberg and Feldberg presented six typical protocols of malingerers in which most responses were evasive, unelaborated concepts without the qualitative signs so prevalent in the present study. Thus the attempt by normal college students to simulate abnormality seems to produce quite different results on the Rorschach from those of malingerers who have more realistic consequences at stake.

In order to demonstrate whether the Rorschach can actually be faked in the direction of serious maladjustment, the faked records of normal subjects could be compared with those of matched psychotic patients in much the same manner as the present study. Such a study might also include Rorschach-wise subjects, since in the present investigation the mere experience of a pretest under standard conditions seemed to make subjects more effective in faking. It might also be interesting to know whether the in-

dividual or group Rorschach is more susceptible to faking.

In conclusion the present investigation shows rather clearly that at least one type of set influences Rorschach performance. Many more studies are needed to determine the limits of conscious alteration on the Rorschach. It would seem from the present study that further studies of set on the Rorschach cannot only be useful in refining the Rorschach as a tool, but may also contribute to an understanding of personality dynamics.

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An Experimental Study of Symbolism on the Bender Gestalt

EMANUEL F. HAMMER, PH.D
Psychiatric Institute, New York

The concept of symbolism as it appears in clinical context is closely related to several other psychodynamic phenomena. The dynamisms of displacement, substitution and stimulus generalization all rest on the concept of symbolism. An understanding of symbolism is at the core of an area of psychopathology which includes the phobias, obsessions, compulsions, conversion symptoms and psychotic states. In the area of normal psychology the concept of symbolism is essential to the interpretation of dreams and the understanding of s l i p s of tongue and pen, forgetting, and so on.

In the battery of projective techniques, the Bender Gestalt Test, which was originally conceived as a psychomotor technique, has lately been interpreted in a symbolic frame of reference. At the present time, however, this technique, which has received increasing use as a clinical instrument in this country, is interpreted with the clinician r e l y i n g predominantly upon intuition. While the *feel* of the artist will probably always remain an integral component of the clinician's armamentarium — certainly for the next thirty years— it is in efforts to balance the ratio more definitely in favor of the scientific factor over the intuitive element that the greatest hope lies for the most rapid advancement of projective techniques.

Since the publication of Bender's original monograph (1) five studies (2, 6, 7, 8, 9) have appeared which investigate the problem of validation of interpretive hypotheses. Of these, only one (8) has directly concerned itself with the question of symbolism. These latter experimenters employed the original approach of presenting the Gestalt figures to a group of college students for their associations rather than for their reproduction of the designs. An underlying assumption of their investigation was that people apperceive the Wertheimer figures in characteristic ways. On the basis of their subject's associations, Suczek and Klopfer (8) formulated a tentative hypothesis in regard to the basic stimulus properties of each test figure. Many of the hypotheses highlighted symbolic value, for the test material, of a psychosexual nature.

The broadest purpose of the present study is to investigate symbolism in general on the Bender Gestalt, its next most specific purpose is to test Suczek's and Klopfer's hypotheses in psychosexual areas, and its most specific purpose is to isolate the Bender Gestalt indices of phallic sensitization, castration feelings and reactions to castration feelings.

EXPERIMENTAL DESIGN

The carrying out of the provisions of the eugenic sterilization law in many states appear to offer a unique experimental opportunity for the investigation of the psychological reaction to a situation which many patients seem to interpret, consciously or unconsciously, as equivalent to castration. Clinical experience with sterilized subjects indicate that a large number respond with temporary, or more or less enduring, feelings of castration (5). Furthermore, many patients when asked to describe what they expected sterilization to be, indicated that it was an actual castration they expected. Gamble (4) has

highlighted the frequent equating of sterilization with castration on the part of not only the patients but also their parents and other relatives. He has pointed out the laity's fear of resultant changes, such as beards on female faces, soprano voices in male throats, decrease of sexual responsiveness or prowess, and removal of part of the genitals.

Assumption

The basic assumption, then, of the present study is that sterilized subjects, in part at least, respond to the operation with feelings of castration.

Subjects

The individuals included in the present study comprised an experimental group of 20 males between the ages of 16 and 28, all of whom underwent surgical sterilization, and a control group of 20 males between the ages of 17 and 30, all of whom underwent operations other than sterilization, i.e. tonsillectomy, appendectomy, etc. The respective means were 20.4 and 21.2 years.

Whereas the age range and means of the two groups closely approximated each other, the IQ range of the groups was not as similar as could be desired. Whereas the IQ's of the members of the experimental group ranged from 60 to 130 with a mean of 83, the IQ's of the subjects in the control group ranged from 65 to 128 with a mean of 91. The subjects in both experimental and control groups included high-grade mental defectives, individuals of borderline intelligence, pseudo-feebleminded individuals, epileptic patients, and several "psychopaths." Three subjects in the experimental and two in the control group had been psychiatrically diagnosed as psychotic. The sampling in the study was certainly not ideal from the viewpoint of a firm basis upon which to make generalizations, but one's experimental conscience, in this case, had to be content with the limitations in subject population provided by the enactment of the sterilization laws.

In addition, the geographic factor was not adequately equated. Whereas all of the subjects of the experimental group came from Virginia, only one-half of the control subjects were Virginians; the remaining half were from various hospitals in New York. The writer regrets this experimental flaw[1], but he proceeded on the assumption that the regularities or laws of human behavior operative behind genital symbolization were not likely to be dependent upon regional factors to any significant extent. This is analogous to the assumption which rests behind the prevalent use of college students as subjects from whose behavior one can draw generalities concerning the humanness of people. It is in regard to such laws of behavior universally operative for all individuals, that Kurt Lewin wrote of the concept of proving a law from a single case.

Procedure

The subjects of the experimental group, all patients at Lynchburg State Colony, Virginia, the institution at which the study was undertaken, customarily were administered a Bender Gestalt Test as part of the projective battery given during their first two months at the Colony. The day a patient chosen for sterilization was to undergo the operation, and after he had been admitted to the hospital ward, the Bender Gestalt Test was re-administered. This was done with the expectation that castration feelings, if

[1] Necessitated by his accepting a position in New York.

TABLE I Comparison of Bender Gestalt Items of Subjects Undergoing Sterilization and Those Undergoing Other Operations
(Tested after being Informed of the Impending Operation)

	Experimental Group	Control Group	P
Figure A			
Diamond elongated horizontally	6	1	.05
Broadened contact between circle and diamond	6	3	—
Space between circle and diamond	3	1	—
Diamond penetrating circle	4	0	.05
Reinforcement, erasures or difficulty with angles	5	2	—
One point missing from diamond making it a triangle	2	0	—
Figure 1			
Dots changed to circles*	9	2	.01
Dots changed to dashes	1	0	—
Figure 2			
Downward slope of figure	5	3	—
Upward slope of figure	0	1	—
Circles fan out so that they are more widely spread apart in the end than in the beginning columns	6	4	—
Angulation disappears so that figure loses its point†	8	1	.01
Rows overlap at one end forming a point‡ (see Plate I)	4	0	.05
Figure 3			
Pointed angulation becomes flattened or rounded (see Plate I)	11	3	.01
Reinforced or emphasized tip of figure (see Plate I)	6	1	.05
Figure fanned out at tip	2	1	—
Dots changed to circles*	8	2	.05
Figure 4			
Contact point significantly displaced upward or downward, or no contact at all (see Plate I)	11	3	.02
Significantly elongated open square section	2	0	—
Reversal of curved line so that the rectangular section is now presented as entering the opening of the curved section (see Plate I)	2	0	—
Overlapping or penetration of one half of the figure into the other	4	0	.05
Figure 5			
Flattened half circle so that it becomes more like a quarter circle	2	0	—
Appreciably elongated diagonal line	4	0	.05
Appreciably shortened diagonal line	5	2	—
Drooping diagonal line (see Plate I)	4	0	.05
Diagonal line sticking straight up	4	0	.05
Diagonal line changed toward the horizontal	1	0	—
Dots changed to circles*	3	2	—
Dots changed to continuous solid line	2	0	—
Line penetrating half circle	3	0	—
Tendency toward closing of circle§	4	1	—
Figure 6			
Trouble with crossing: broken, shaky or sketchy line employed at this point (see Plate I)	5	0	.02
Vertical line only partially through horizontal, so that significantly less of the vertical line appears below the horizontal line than above it	6	1	.05

TABLE II *(Continued)*

	Experimental Group	Control Group	P
Figure 7			
Noticeably less overlapping of the two components of the figure	5	2	—
Elongated points	7	1	.02
Bent points (see Plate I)	6	1	.05
Components of the figure separated	5	3	—
Squared ends (i.e. points drop off) or rounded points (see Plate I)	8	1	.01
Excessive erasure indicating difficulty with points.	4	2	—
Figure 8			
Elongated points and/or figure	6	1	.05
Bent points	5	0	.05
Flattened or rounded points	7	1	.02
No inner diamond	1	0	—
Inner diamond not touching horizontal lines	5	2	—
Bizarre inner diamond treatment (see Plate I)	4	1	—
Figure X-1			
The vase section relatively greater than the double-ended arrow section. This was achieved by either a significant increase of the vase size or decrease of the arrow size	10	1	.002

* Reflecting feelings of femininity (vaginal symbol) or else regression.

† Reflecting either feelings of castration or flattening of affect.

‡ Reflecting either compensatory virility strivings or else reactive aggression.

§ A reflection of compulsivity or else feelings of feminization implied in the circle possibly symbolizing a vagina.

present, would be exaggerated, or if not previously present, reactively brought about by anticipation of the operation.

The members of the control group were similarly treated.

The accumulation of data represented the yield of a 12 month period. The small number of subjects necessitated the use of small sample statistics in the quantitative treatment of the data. The gathering of data will continue, but the results thus far are so striking that they appear to warrant presentation at this time.

The drawing elements in the sets of Bender figures of both the experimental and control groups were judged by two different clinicians independently. The sets of judgments of the two clinicians were then pooled, disagreements being rechecked jointly and either reconciled or discarded. The clinician-judges operated "blindly", that is, they did not know whether they were judging the Bender productions of a member of the control or experimental group.[2]

In evaluating the data statistically, Fisher's Exact Method of 2 x 2 Tables was the technique employed. The principal question which statistical analysis had to answer was: Are there differences between Bender Gestalt variables of

a. Sterilized subjects before and after being informed of sterilization plans and
b. Sterilized subjects and controls after being informed of surgical plans.

Reliabilities of differences between the frequency of occurrence

[2] The writer wishes to express his gratitude to Lila K. Hammer for serving as the other clinician-judge.

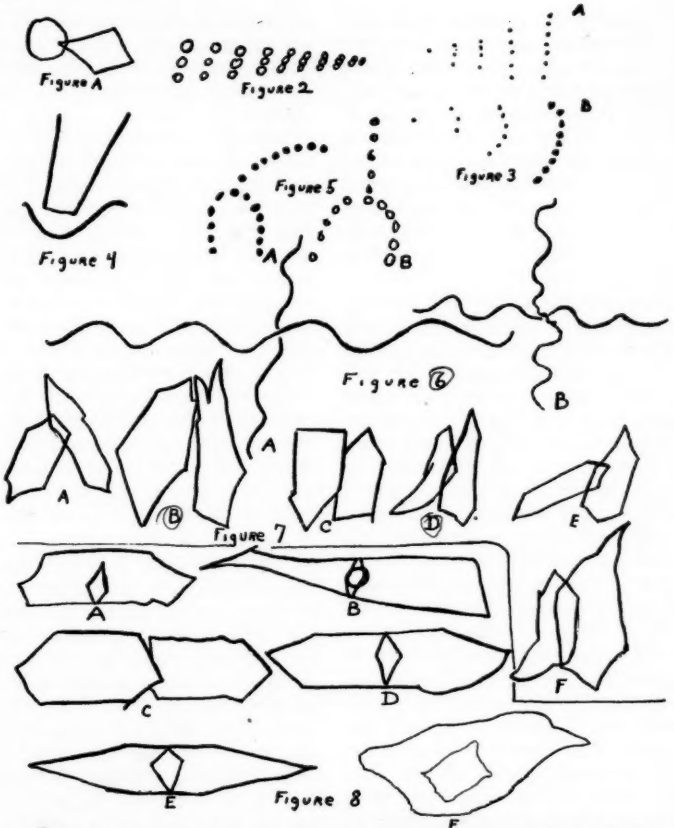

PLATE I—Castration Feelings and Reactions to Such Feelings Reflected in the Bender-Gestalt Figures.

of each item were calculated and the items were considered significant if they fell at, or better than, the five per cent level of confidence.

RESULTS AND INTERPRETATIONS

The data obtained are summarized in Table I.

The illustrations in Plate I are the more dramatic examples of the portrayal of castration feelings (drooping or bent points, 5A, 7D, 7F, 8A, 8B, 8D; sliced off points, 3A, 7C; split points, 7B) and the reactions to such feelings rather than representative of the handling of the figures in the experimental group. For illustrative purposes the most extreme distortions are presented, and the reader should be cautioned that he would not ordinarily find such overt depictions in his clinical practice but rather lesser tendencies in the same direction. The clear depiction of feelings of castration and reactions to such feelings is a function of the intense emotional impact of the

castration threat implied in the impending sterilization operation and few clinical cases, even among sex offenders studied by the writer, appear to show such obvious castration fear. However, in addition to conveying the symbolic value of the figures, the illustrations may serve as extreme forms of phenomenae, the milder forms of which the clinician may look for in his everyday clinical practice.

Inspection of Table I reveals that the statistically significant indices of castration threat on Figure A are (a) horizontal elongation of the diamond, and (b) the diamond penetrating into the circle. Both these distortions in the reproduction of the figure are illustrated in the one example, Figure A, Plate I. In the study of Suczek and Klopfer (8) the college students exhibited a sex difference in their associations to this figure. The association of the men frequently consisted of the perceptual manipulation of one of the two parts as in "square peg being fitted into a round hole," whereas no such perceptual manipulation occurred on the part of the women. The associative tendency of the college students and the psychomotor performance of the sterilized subjects tend to support each other in indicating a male genital symbolic value for the diamond and female genital symbolic value for the circle. The subjects in the present study who drew the diamond as penetrating the circle may, therefore, be assumed to have reacted to feelings of castration by sexual preoccupation and compensatory virility strivings.

In regard to Bender Gestalt Figure 1, Table I indicates that a statistically significant difference exists between experimental and control groups in regard to reproduction of the dots as circles. Two alternate interpretations are possible on this score: (a) regression, or (b) feelings of femininity reflected in the vaginal symbolism of the circles.

The distortion in the handling of this figure by other subjects involves the changing of dots to dashes, a regressive indication. The fact that this latter index of regression did not differentiate between control and experimental groups, whereas the former one did, may conceivably be explained by the fact that there is an added factor making for the changing of dots to circles which is not operative in inducing the change of dots to dashes. Hence, a reaction in addition to regression, namely feelings of femininization, may be reflected in the drawing of the dots as circles.

Two items achieve significance on Bender Figure 2, as can be seen from Table I. The first of these is the tendency to flatten the angulation in progressive columns, so that whereas the beginning sets of three circles form a diagonal line, the progressive sets of circles drawn end up forming a line straight up and down in the vertical dimension. Whether this loss of angulation is a reflection of feelings of loss of the phallic tip or whether it is merely an indication of dulling of affect is speculative at this point, and a question for future research. The second statistically significant distortion in the handling of Figure 2 consists of overlapping of the rows at one end so that an arrowhead sort of figure results (see Plate I). Whether this is a phallicized representation indicating compensatory virility strivings or is a reflection of aggression in reaction to the impending operation, is also a question for further research.

Three statistically significant types of handling of the Gestalt

occur in Bender Figure 3. The first of these consists of flattening or rounding the right hand pointed end of the figure. This is illustrated in Plate I, Figure 3, A and B, respectively. The second significant item consists of a reinforcing of the tip of the figure, as if to make the endangered phallic member stronger. This treatment is also illustrated in Figure 3, B. The third item attaining statistical significance is that of reproducing the dots as circles thus, again, suggesting either a regressive reaction or feelings of femininity in reaction to castration threat.

The college students (8) frequently associated "arrow flying," "object moving," "birds or planes in flight," to this figure. The fact that they usually saw the movement from left to right supports the view that with the sterilized subjects, it was the forward tip rather than the tail end of the figure which was reinforced or flattened. In the college students' associations, conventional psychoanalytic phallic symbols were well represented, thus further supporting the view that the sterilized subjects' handling of the figure was in response to psychosexual threat, specifically psychosexual castration.

Bender Figure 4, according to Table 1, differentiated between experimental and control groups on two items. The first of these consisted of overlapping or penetration of one part of the figure into the other. The second significant item was that of significant displacement of the contact point or else lack of contact entirely. The treatment illustrated for Figure 4, Plate 1, did not occur frequently enough to obtain statistical significance but is presented because of its dramatic sexual symbolism. The open square is (phallically) elongated and the bell-shaped section of the figure is inverted to form a receptacle into which the elongated section now enters. The Gestalt now appears to represent, in rather direct fashion, genital intercourse and would indicate sexual preoccupation and compensatory virility strivings as a reaction to castration threat. The only other instance of such a depiction with which the writer is acquainted was reported by Brown (3) as occurring in a case of involutional disturbance.

In regard to Bender Figure 5, Table 1 reveals three items attaining statistical significance. The first of these is a conspicuous elongation of the diagonal extension. The second is a treatment of the extension as drooping rather than as a straight line (see Figure 5, A, Plate I). The third significant item involves treatment of the diagonal extension so that it sticks straight up, at a 90 degree angle to the base of the figure, rather than at the 45 degree angle assumed in the stimuli card (see Figure 5, B, Plate I).

It is in regard to this figure that the present study attains its closest congruence with the study of college students' associations to the figures (8). The college group showed rather definite sex differences in the way they apperceived this figure. The male students saw the figure primarily as a solid with emphasis upon the extension: "gun turret" and "observatory." The female college students apperceived the figure predominantly as an opening for objects to pass through, such as "cricket wicket" and "tunnel." Thus, it may be seen that the focus of interest for the males was in the extension and for the females in the enclosed space. Hence, this Bender Gestalt figure symbolically provides for an easy identification with genital sexuality of the respec-

tive sexes in "normal" people, and presumably of the opposite sex in sexually disturbed individuals. The present study, therefore, supports the tentative hypothesis presented by Suczek and Klopfer (8) that the handling of this figure will reflect the subject's attitude toward his basic sexual identification. For example, in the present study undue emphasis on the extension by means of making it longer in proportion to the rest of the figure would reflect the fact that the subject prizes, or overstrives for, masculinity. Whereas this represents a compensatory reaction to castration threat, those subjects who drew the extension as drooping may be viewed as directly etching their feelings of phallic or psychosexual impotency, as precipitated by the impending sterilization operation.

The table reveals that Bender Figure 6 has two statistically significant items differentiating the experimental from the control group. The first of these consists of the lines not touching where they cross, or being treated at this point in more shaky or sketchy fashion (see Plate I, Figure 6, A and B respectively). The second significant item consists of the vertical line going only partially through the horizontal line so that there is a larger portion of the vertical line above the horizontal line than below it. These findings are conguent with the writer's findings on sex offenders, and would tend to indicate psychosexual insecurity and inadequacy in regard to attempting genital intercourse.

Three items on Bender Figure 7 attain statistical significance in differentiating the experimental from the control group. These consist of (a) elongated points, (b) bent or twisted points (see Plate I, Figure 7, D and F), and (c) squared ends giving the impression of the points having dropped off (see Figure 7, C). Another interesting illustration of the way castration feelings were reflected in the copying of the Bender Gestalt figures may be found in Figure 7, B, in which the upper right point was split down the center[3] rather than cut off transversely.

Figure 7, E, and Figure 7, F, were both made by the same subject, the first upon admission to the institution before he was informed that he would undergo eugenic sterilization and the second on the day he was awaiting the impending operation. Whereas Figure 7, E, is not a perfect reproduction of the stimuli, it is, however, an acceptable performance showing none of the distortions, bending and twisting of the points which it later exhibits, presumably under the impact of castration feeling, on the day of the operation.

The college students (8) frequently associated phallic symbols such as "bullets" and "bombs" to this figure. The present study supports the tentative interpretive hypothesis of Suczek and Klopfer that "the handling of this figure will reflect the individual's feeling of potency . . . Difficulty in reproducing the figure, as sketching and redrawing or simplifying the overlapping relationship, would indicate feelings of impotency" (8, p. 71).

Three items achieve statistical significance in regard to Bender Figure 8: (a) elongated points and/or figure (see Plate I, Figure 8, E), (b) bent and inadequate points (see Figure 8, left point of A and right point of D), and (c) flattened or rounded points (such as were previously illustrated in Figure 7,

[3] Suggesting that castration feelings for this subject may involve transformation of the male into the female organ.

C). In addition to these statistically supported items several other interesting things occurred. Figure 8, B, illustrates the superimposing of an inappropriate circle upon the center diamond section as if to convey the subject's intensified feelings of femininity.

A similar reaction appears to be reflected in Figure 8, F, where the subject distorts what is ordinarily apperceived as a phallic symbol into a vaginal one. The general elongation of the figure is changed in the direction of a circular one, there is a loss of sharp angulation and curves appear in its stead, and the center area gains in emphasis as if to portray a larger opening.

The college students here, as with Bender Figure 7, associated "bomb," "torpedo," and this time also saw decorative objects such as "Indian bead work" and "diamond stud or a tie pin." The observation of Suczek and Klopfer that this figure is generally representative of phallic sexuality is supported as is their tentative interpretive hypnosis: "The handling of this figure will reflect the individual's attitude toward phallic sexuality . . . Sketching, redrawing and erasures would indicate an attitude of tension and anxiety toward phallic sexuality" (8, p. 72).

Figure X-1 is a experimental figure prepared by Suczek. It consists of two portions, one part looking like a schematic cross section of a vase lying on its side, while the other part consists of a double-ended arrow, one end of which is pointing into the open end of the vase. The figure was constructed in order to directly tap sexual identification and ambivalence by employing a figure structured to symbolize both male and female sexuality. The results of the present study support the interpretation as to the specific value of this figure. It was able to differentiate between control and experimental groups at the .002 level of confidence. Exactly half of the experimental subjects displayed a noticeable relative increase in the size of the vase section over the size of the arrow section. Some of the subjects conveyed this relative impression by increasing the size of the vase section while other subjects decreased the size of the arrow section. In either event they drew an arrow which was too small to fill the vase, presumably a direct reflection of impotency feelings. The results here are congruent with the statement of Suczek and Klopfer that emphasis of one of the parts of the figure would indicate uncertainty in identification and psychosexual insecurity.

DISCUSSION

The unconscious is an entity which cannot be explored directly, but from which messages usually reach consciousness only after being clothed in symbolic disguise. The rules of such symbolic disguise appear to fit into certain generalities or to make up a language of symbolism.

After giving due recognition to the view that each individual employs private symbols in dreams and other creative aspects of behavior, psychoanalytic theory states that certain symbols are employed so prevalently as to indicate that they have a universal meaning—a meaning only secondarily modified by the overtones and colorings of personal experiences. The present study, though based on a small sample, tends to support this view in the circumscribed area investigated.

In fairness to the validity of symbolism, it must be pointed out that it is possible that even more of the

drawing elements might have attained a statistically significant level of confidence as indicative of genital representation and castration feelings if an experimental group could have been found in which feelings of castration were present in one hundred per cent of the group's members. To the extent to which the assumption of this study[4] does not validly hold for every member of the experimental group, to that extent is the accumulation of data leading to the rejection of the null hypothesis probably handicapped. In this regard it may also be noted that to the extent to which some members of the control group suffered from feelings of castration (especially immediately before a surgical operation), to that extent was evidence leading to the rejection of the null hypothesis again possibly handicapped.

Summary and Conclusions

Bender Gestalt productions of 20 subjects undergoing eugenic surgical sterilization were compared to those obtained from 20 subjects undergoing operations other than sterilization. On the assumption that subjects who are about to undergo eugenic sterilization would be prone to respond with feelings of fear of castration, the Bender drawings of the two groups were compared for indices of fear of castration, feelings of castration, and reactions to such feelings (notably compensatory virility strivings).

Employing groups defined in terms of presence or absence of an experimental variable, rather than gross pathology, 22 test items related to a specific personality variable, castration fear, have been isolated on the Bender Gestalt figures. In that the groups were relatively small in number and not as completely equated as would have been desired, the following conclusions should be viewed as probability statements, whose validity should be tested on other similar groups, rather than as definitive:

1. Elongated objects on the Bender Gestalt, such as points and extensions (Figure 5) are susceptible to being utilized as phallic symbols. Circles (see Plate I, Figure A, and Figure 8, B) may be employed as vaginal symbols and serve as reflections of felt castration and feelings of femininity in Bender productions of male subjects.

2. Virility strivings may be reflected in the drawing of contact points, such as in Figure A and 4, whereby an impression of penetration is conveyed by the overlapping of two components of a figure at the point of contact. Feelings of psychosexual insecurity are mirrored in the handling of the crossing of lines on the Bender Gestalt (see Plate I, Figure 6, A and B); such handling includes excessive erasure, inability to complete the crossing, and the vertical line extending only partially through the horizontal one. Feelings of sexual inadequacy may be further conveyed by relative size given symbolic masculine and feminine components of the Gestalt (see Figure X-1). Compensatory virility striving and psychosexual preoccupation may be more directly represented by distortions resulting in phallic symbols entering vaginal symbols (see Plate I, Figure 4).

3. It is in the drawing of these genital symbols that an individual may reveal his feelings of genital adequacy or inadequacy, feelings of presence or absence of potency, feelings of satisfaction or dissatisfaction in reference to desired phallic size,

[4] Sterilized subjects, in part at least, respond with feelings of castration fear.

and castration anxiety. Such feelings may be depicted by his presentation of the symbols as damaged, split (see Plate I, Figure 7, B), twisted or bent (Figure 7, F and D), flattened, rounded or reinforced (Figure 3, A and B), missing (Figure 7, C), drooping (Figure 5, A) or overly erect (Figure 5, B).

4. There is some tendency for individuals to react with regression to surgical sterilization.

5. A logical extension of these findings, then, would appear to indicate the advisability of providing individuals selected for eugenic sterilization with some form of psychotherapeutic as well as educational support to the end that psychic trauma and castration anxiety produced by such surgery can be held at a minimum. Such a psychotherapeutic relationship will have to deal with the patient's fear that he will be damaged and no longer be a complete unit within himself. His shift toward feelings of inadequacy concerning the assuming of the active male sexual role, though partially on a reactive basis, appears to tap basic potentials in the individual. Hence, psychotherapy sessions, before and after the sterilization may be needed for more than a short period of time. In addition, the psychotherapist will have to deal with the possible traumatic effects resulting from a procedure which says in affect, "You are inferior; you are unfit to procreate."

6. Other studies on larger groups are indicated as a necessary step in supporting the conclusions of the present study and in investigation of (a) the use of genital symbolism by female subjects, and (b) symbolism, other than sexual, on the Bender Gestalt test.

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A Comparison of H-T-P's of Rapists and Pedophiles[1]

EMANUEL F. HAMMER, PH.D.
Research Project, Psychiatric Institute, New York City

Experience with inmates at Sing Sing Prison suggests that the H-T-P projective drawing method as a personality assessing device is especially suited to the task of formulating the psychodynamic picture of incarcerated subjects. Correctional institution inmates, because of their basic mistrust and bitter resentment of authority figures in general, remain somewhat suspicious of all personnel employed at the institution, even after years of public relations effort on the part of the psychological and psychiatric staff. Loaded down with pervasive fear of revealing themselves to an authority figure even remotely associated with the prison setting, defensiveness follows, and the inmates dare not see anything off the beaten track. The number of their Rorschach responses, for example, tends to drop to a meager ten to fourteen, and their TAT themes assume a barren quality, remaining for the most part on a relatively superficial and descriptive level. Expressions become stereotyped and the inmate sticks to the "safe" response. Attempts at conformity and undeviating acceptability in his voiced percepts are his rule. Richness of imagination is stifled, with real feeling hidden behind an obscuring curtain of constant control. The scanty record thus obtained loses both the pith and subtle nuances necessary for full and accurate assessment of the individual type of personality reaction pattern.

When a subject cooperates consciously and does not resist on a subconscious level, it is generally agreed by clinicians that the Rorschach usually provides the richer personality picture, but when the subject is evasive or guarded, projective drawings have been found to be the more revealing device. The bulk of what the Rorschach yields of the subject's personality comes by way of a relatively indirect route. The subject's Rorschach percepts must, first, be translated into and, second, be communicated in, verbal language. In drawings, on the other hand, the subject expresses himself on a more primitive, concrete, motor level.

In addition to the writer, Landisberg (9) has also found that patients exhibiting guardedness seem more likely to reveal their underlying traits and psychodynamics in the drawings. She states, "They are able to exercise more control over their verbal expression, seem to be more intellectually aware of what

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[1] Part of a study set up under the auspices of the New York State Commissioners of Correction and Mental Hygiene upon the recommendation of Governor Dewey. The purpose of the Research Project is to uncover the underlying psychodynamic causes of "sex crimes" and to ascertain the treatability of sex offenders. This task was undertaken at the New York State Psychiatric Institute, originally under the immediate direction of David Abrahamsen, M.D., and presently under the directorship of Bernard C. Glueck, Jr., M.D. Grateful acknowledgement is made to John N. Buck, Bernard C. Glueck, Jr. and Selma Landisberg for their many fruitful suggestions and comments.

they might be exposing on the Rorschach. They tend to lose some of this control in their creative, motor expression (employed in drawings)" (p. 181).

In addition, inmates as a group are generally among those subjects who cling, for various reasons, to the concrete, who hence become anxious and threatened when confronted with the ambiguous stimuli of the Rorschach and attempt to steer clear of real involvement with this type of projective situation, at least in so far as communicating and explaining verbally whatever it is that they may see. This has been found to be especially true in regard to the sex offender sub-group of the inmate population, the subjects which the present Research Project was set up to study. To illustrate, those sex offenders psychotherapeutically seen after psychological examination often confide to their therapist, after rapport has been cemented in a transference setting, that on the Rorschach they did not reveal everything they saw, e.g., "especially those dirty sex pictures that were there." In responding to the H-T-P, on the other hand, these patients must reveal something of their sexual adaptation in one of two ways, either in their manner of handling the direct or symbolic sexual areas of the House, Tree, Person figures or else, all the more, by their omitting to draw areas of the H-T-P that carry sexual implications, for example, genital zone or secondary sex characteristics of the drawn Person, the chimney on the House, and the branches on the Tree.

An incident in point was related by a psychiatrist-colleague who had undergone a psychological examination in being screened for psychoanalytic training. Whereas he was able to withhold Rorschach responses and TAT themes he felt might be damaging to his chances for admission to the psychoanalytic program, he was not consciously able to manipulate his projective drawing productions in a similar manner. While drawing the female Person, for example, he attempted to place a smile on her face. In spite of his efforts, she ended wearing a stern expression. Attempting to present his relationships with females in as benign a light as possible, he proceeded to erase and redraw, but each new rendition only gave her face a more formidable and menacing expression than before. In his own words, he "couldn't control the way she turned out." His performance thus underscored the words of Machover (10): "Stereotyped defenses are less easy to apply to graphomotor than to verbal projections" (p. 85).

The projective drawing phase of the H-T-P is non-verbal, creative and almost completely unstructured. Since the medium of expression is a relatively primitive one—drawing—it is, in comparison with other projective techniques, an especially useful and productive device with those of (1) low intelligence, (2) concrete orientation, or (3) relatively barren and underprivileged socio - cultural background. Since the majority of a prison population meets one or more of these criteria, in addition to the previously mentioned factor of guarded evasiveness, the H-T-P would appear to be a projective technique especially suited for the purpose of obtaining data concerning the sensitivity, the maturity, the degree of an inmate's personality intactness and integration, and the interaction of that personality with its environment.

In view of these advantages, a series of studies employing this

tool was planned. The first factors chosen for investigation were the relatively objective ones of age assigned to the drawn Tree, and to the drawn Male and Female Person.

Since Buck (3, 4) states that the age attributed by the subject to his drawn Tree may serve as an index of the level of felt psychosexual maturity, it was thought that a comparison of clinical data derived from rapists and pedophiles might serve to uncover psychodynamic clues in regard to the personalities of the subjects under study.

Both Machover (10) and Buck (3, 4) state that pertinent material about the subject's level of "psychosocial maturity" may be derived from the ages he assigns to his drawn Persons. The present paper is also an investigation of the drawn Persons of rapists and pedophiles in this respect.

In a sense, the rapists may serve as a control group for the pedophiles in regard to such factors as the experience of having been detected, tried and incarcerated for a sexual offense as well as living in a more or less common prison environment at the time of testing. Pascal and Herzberg (11) have repeatedly found a lack of differentiation between rapists and a control group on various variables. They conclude that "the controls and rapists are indistinguishable from each other" (p. 369). In explanation they state: "If we take heterosexual behavior between adults as our standard, then it is difficult to see how the rapists differ from the controls in sexual behavior *per se*" (p. 371). The rapists probably do differ from the pedophiles, however, on the variable of aggression, the majority of the pedophilic acts having been of a passive and seductive nature. Despite this difference, the rapists remain the best contrast group available for a study of individuals incarcerated for sexual approaches toward children.

At this point a serious question must be raised but left unanswered, for the present. This is the question of validity of projective examinations done after, rather than before, commission of an offense. The present series of studies is concerned with motivational patterns which may be responsible for the enactment of the sex offense, rather than reactive feelings occurring from commission of the act, its detection and the offender's resultant incarceration. A fundamental assumption of the investigation, then, is that the personality traits projected in the H-T-P test are relatively basic and long-standing rather than superficially reactive.

Subjects

Sixty-four sex offenders served as subjects for the present investigation. Thirty-one consecutive inmates at Sing Sing Prison convicted of the offense of rape of an adult female comprised one sub-group, whereas thirty-three consecutive cases convicted of sex offenses involving a female child under 15.5 years of age constituted the other. Thus, all of the men studied were currently "sex offenders" in prison for an overt sexual act defined as illegal by the current New York State law. The rapists' ages ranged from 24 to 60 with a mean of 33.6 and the pedophiles' ages ranged from 23 to 63 with a mean of 34.3.

Throughout the paper, it is to be borne in mind that the cases included represent a sample of individuals *apprehended* for sex offenses. The degree of distortion in the sample brought about by this selective factor cannot be accurately determined. Whether or not there is a definite involvement of

guilt feelings and punishment needs in the motivational matrix, which would operate toward detection in those apprehended, can only be conjectured. Hence, all that can be said in defining the sex offenders employed in the present study is that they are individuals who have been caught, convicted and incarcerated.

PROCEDURE

The H-T-P's under focus in the present series of studies were administered as part of a complete psychological examination customarily given to the research project population. The subject was requested to draw a House, a Tree, a Person, and then a Person of the sex opposite to that drawn immediately prior. A separate sheet of eight and a half by seven inch paper (3) was provided for each drawing. Thus, four drawings including one of a male and one of a female Person were obtained from each subject. In regard to his drawn Tree, the subject was asked how old a tree it appeared to be; a similar procedure was followed for each of the drawn Persons. Vague replies such as "young", "elderly", "a child", and so on, were not accepted. In such cases the subject was then encouraged to specify the age more exactly by designating the number of years. When a subject gave an age range such as "20 to 25" and could not be more specific, the midpoint of the range was employed for quantitative purposes.

Among the other questions in the post-drawing inquiry is one aimed at determining whether the drawing of the Tree is that of a live or a dead Tree. In those cases where the subject replied that his drawing appeared to be that of a dead Tree, the age of the Tree was discarded for quantitative treatment since in such cases the Tree's age is clinically felt to be dependent upon a combination of factors other than the subject's subjective level of psychosexual maturity — the factor presently under study. Empirical evidence suggests that "dead" Trees are drawn by subjects suffering from feelings of inner deadness, decline, decay or decrepancy. Also, instances in which the age attributed to the drawn Tree was more than ten years older than the age of the subject were not included for quantitative treatment since projective drawing clinicians assume that such cases manifest milder feelings of decline and decrepancy, qualitatively similar to that exhibited by subjects drawing "dead" Trees.

The two groups of sex offenders, rapists and pedophiles, were then compared with each other by means of Fisher's (6) t test on the variables of ages attributed to the drawn Tree and to male and female Persons.

RESULTS

The mean age assigned to their Trees by the rapists was 24.37 years whereas that of the pedophiles was 10.62 years. This difference yielded a t score of 4.68 which is statistically significant at better than the one per cent level of confidence.

Whereas the age ascribed to the drawn Tree differentiates the pedophiles from the rapists, the ages assigned to the drawn male and female Persons do not (see Table II).

Both the rapists and the pedophiles, however, ascribed a greater age to their drawn female Persons than to their drawn males, but only for the pedophiles is this difference in assigned age statistically significant (.05 level of confidence). See Table III.

TABLE I—Age of Sex Offender, Victim, Drawn Tree and Drawn Male and Female Persons.

Rapists					Pedophiles				
Patient	Victim	Tree	Male Person	Female Person	Patient	Victim	Tree	Male Person	Female Person
34	20	15	40	12	24	6	13	22	40
25	33	35	25	36	38	15	1	21	11
39	35	4	25	47	23	6	55†	17	27
43	23	30*	35	38	27	?	40*†	45	30
38	66	33	40	19	34	5	10	45	55
29	?	250*†	39	39	36	4	5	36	40
38	20	20	25	28	27	4	35	30	35
24	26	33	25	30	27	6&7	1	35	45
25	24	30	35	35	33	8&11	30*	37	41
28	51	28	37	38	28	5	15	31	43
25	18	35	22	23	35	14	5	30	12
35	42	3	30	35	24	11	200*†	24	32
40	43	50	40	40	38	8-12	35	37	37
27	27	15	25	28	63	6	10	28	30
35	31	32	30	30	28	8	3	29	33
40	20	1	35	35	27	13.5	20*	22	38
26	20	4	51	50	42	13	5	30	35
30	16	40	30	35	49	8	10	8	25
31	21	20	30	30	30	5	5	35	35
60	25	25	30	34	50	5	5	5	8
47	33	35	30	36	51	10	125†	35	38
28	35	25	30	35	30	15	3	40	38
30	35	15	30	50	33	12	9	47	50
30	25	10	25	45	35	15	100†	15	38
32	27	16	18	40	36	15	50*†	40	60
31	35	35	31	63	31	6	20	20	40
40	33	50	25	16	33	6	6	30	54
35	26	15	22	17	28	10	7	35	60
33	32	27	30	35	29	14	8	38	48
31	30	30	22	60	34	9.5	12	25	20
32	30	20	50	42	39	4	7	35	35
					36	13	16	38	38
					33	9	15	20	25
33.58	30.07	21.37	31.03	35.51	34.27	9.47	10.62	29.84	36.24

* Tree described as "dead" or "dying"
† Age attributed to Tree is more than 10 years older than subject

TABLE II—Significance of Difference Between Rapists and Pedophiles: Age Attributed to Drawn Tree and Male and Female Person

Subject Group	Drawing	N	Mean Age	t	P
Rapists	Tree	30	24.37	4.68	.01
Pedophiles	Tree	25	10.62		
Rapists	Male Person	31	31.03	0.54	—
Pedophiles	Male Person	33	29.84		
Rapists	Female Person	31	35.51	0.25	—
Pedophiles	Female Person	33	36.24		

TABLE III—Comparison of Age of Drawn Male Person with Drawn Female Person

Subject Group	N	Mean Age of Drawn Male	Mean Age of Drawn Female	t	P
Rapists	31	31.03	35.51	1.76	—
Pedophiles	33	29.84	36.24	2.28	.05
Rapists plus Pedophiles	64	30.42	35.89	2.79	.01

DISCUSSION

Age Projected onto the Tree

The finding that the group of individuals engaging in sex acts with female children draw significantly younger Trees (mean about eleven) than the group of inmates committing rape on adult females (mean about twenty-four) implies that two different contentions, each from a different theoretical area, may receive support from the present study.

The use of projective techniques in the investigation of group differences in personality variables has a traditional double value. Where the trait within a certain group is accepted on a high level of confidence as being present it offers the opportunity for validating the projective instrument. And where a sign or cluster of signs on a projective technique is generally accepted as reasonably suggestive of certain personality constellations the researcher may thus attempt to investigate traits, conflicts, feelings and drives occurring in a particular group of subjects.

From a logical viewpoint, then, there appear to be principally two complementary positions one can take in interpreting the significant difference obtained between Tree ages of rapists and pedophiles. One may accept the H-T-P hypothesis (4) that the age ascribed to the drawn Tree tends to reflect the felt psychosexual age of the subject. If this is assumed, the data then indicate that the pedophile tends to seek immature sex objects because he himself feels psychosexually immature and childish. He tends to seek another child because he feels more comfortable with someone at his own development stage, as it were.

On the other hand, the second position of logic that can be taken, is to assume the psychoanalytic viewpoint that pedophiles are people who feel psychosexually immature. If the psychoanalytic position is accepted, then Buck's hypothesis concerning the age of the Tree receives support.

On a practical level, however, both of the above hypotheses would have to be at least partially correct for the statistically significant data to have occurred.

Thus, the present study suggests that one of the motivational mainsprings operative in the pedophile is a psychosexual fixation on, or regression to, a childhood level – a level at which sexual urges, normative studies tell us, are expressed in the forms of mutual seeing, touching, and manual manipulation. Confirmation of this view is provided by the fact that these practices are the extent of the sexual activities of the overwhelming majority of the pedophiles.[2]

Age Projected onto the Drawn Male and Female Person

The finding that pedophiles draw the female figure as significantly older than the male figure suggests two complementary hypotheses:

A. The drawn female is accorded greater status, by the pedophile, as a function of his feeling of psychosexual and/or psychosocial inadequacy and inferiority. Adult women appear as older or maternal individuals endowed with greater standing before whom the grown-up little boy – as the previous finding[3] indicates the pedophile con

[2] An additional motivational pressure suggested by the picture provided by the projective technique may be a narcissistic search, on the part of the pedophile, for one who is as he would like to be—a desirable child.

[3] Concerning the age of the Tree.

ceives himself to be — feels less adequate and relatively helpless.

B. The age ascribed to this opposite sex figure, by the pedophile, may be viewed as moving along the dimension from an appropriate sex object to a mother-figure, since most adult subjects tend to draw a figure representing a socially acceptable sex object when asked to draw a Person of the opposite sex. Thus, the sex figure is maternalized or to state it as an implied corollary, the maternal figure is sexualized.

We may, then, postulate that as a child the pedophile originally desired, psychosexually speaking, the mother-figure because she was the nearest and most significant female. Having failed to resolve his original entanglement in Oedipal feelings, he now tends to view the mature female as an object arousing his forbidden Oedipal attitudes.

An illustration of a rather representative female Person drawn by a sex offender is presented. The pedophile subject drew a distinctly shapely female, colored the drawing with an erotic combination of red for the dress and yellow for her hair, and then rather incongruously described her as a 50-year-old woman. This sexualized view of a late middle-aged female, by a 26-year-old subject, reflects the strikingly immature confusion of sexual and maternal figures found in the pedophile group.

The Two Sets of Data Viewed Together

The psychodynamics which motivate the pedophiles, as suggested by their drawing of significantly older female than male Persons, may be integrated with the dynamics suggested by their drawing of Trees younger than those drawn by the rapists. The latter finding

FIGURE 1

implied, in accord with Buck's (3, 4) hypothesis concerning the age of the Tree as a reflection of the felt psychosexual age of the subject, that the pedophile inwardly feels immature and therefore seeks another immature sex object of approximately the same psychosexual age.

If one accepts the suggested evidence that the pedophile is plagued by forbidden sexual desires toward a mother-figure, the two sets of findings may be readily bridged: his frightening desires cause the pedophile to renounce adult females, as available sex objects, and throw himself into a regressive flight into immaturity. He falls back, or has remained fixated, upon intermediate goals in regard to

both sexual object and sexual activities, the latter usually involving seeing, touching, and manipulating of another child's genitals.[4]

SUMMARY

H-T-P's were administered to 64 sex offenders at Sing Sing Prison, 31 of them incarcerated for an act of rape of an adult female and 33 for a sexual approach toward a female child. After each individual completed his drawing of the Tree he was asked how old a Tree the drawing depicted. The ages assigned to the drawn Trees of the pedophiles were compared to that of the rapists, with the latter serving as a control group for the former for such variables as detection and incarceration for a sex offense and the sharing of a more or less common prison environment at the time of testing. The mean ages projected onto the Trees by the rapists and pedophiles were 24.4 and 10.6 respectively. After each subject had drawn a Person and then a Person of the sex opposite to that of his first drawn figure, he was asked to specify the apparent ages of both the male and female Persons drawn. Both the rapists and the pedophiles as a group drew female Persons older than male Persons, but only with the pedophile group was the difference in assigned age statistically significant.[5]

The factor of the relatively small number of subjects employed suggests that the following conclusions be offered in a tentative manner:

1. The age with which the drawn Tree is endowed may serve as a rough index of the subject's felt level of psychosexual maturity.

2. One of the motivational mainsprings operative in the pedophile's sexual behavior is a psychosexual fixation on, or regression to, a childhood level. This fixation or regression to an intermediate development level encourages the pedophile to seek immature sex objects of approximately the age at which he feels psychosexually adapted.

3. To the pedophile, adult women appear as older or maternal individuals endowed with greater relative status; he cannot accept them as sex partners because of his Oedipal wishes and their forbidden quality.

4. The gap between the unresolved Oedipal feelings suggested by the ages projected onto the drawn Persons and the findings (age of the Tree data) which suggested that the pedophile inwardly feels psychosexually immature, can be bridged with the view that the pedophile reacts to the frightening sexual desires he harbors toward mother-figures and their symbolic equivalents, mature females, by a flight into, or a fixation upon, immaturity and the embracing of intermediate impulses such as the seeing and touching of another child's genitals.

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[4] It is quite possible to view the casual relationship as operating in the opposite direction, that is, the immaturity component keeps the patient emersed in Oedipal feelings. This does not, however, impress us as the most likely direction of the relationship, although this question of direction remains to be resolved by future study.

[5] It may be speculated that the rapist's unresolved Oedipal dynamics appear to be qualitatively similar to, but quantitatively less intense than, those of the pedophiles. Apparently, because of this lesser intensity, the rapist is able to partially throw off the constricting effects of his fear of the adult female in a violent attempt to negate or overcome this fear.

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Psychosomatic Illness and Projective Tests: The Rorschach Test[1]

LEONARD KRASNER, PH.D. AND MELVIN KORNREICH, PH.D.[2]
V. A. Hospital, Lexington, Ky., and Veterans Administration Regional Office, Brooklyn, New York

THE PROBLEM

There has been increasing interest, both in medicine and psychology, in the relationship between certain physical illnesses and the personality characteristics of patients with these illnesses. Until very recently, most reports in the literature describing the personality characteristics and behavior of these patients have been based on impressions by internists and psychiatrists derived from diagnostic and therapeutic interviews, psychoanalysis, historical material given by the patient and his relatives, and sometimes, direct observation of the patient's behavior. The point of reference for these observations seems to have varied from unsystematic, casual observation in different situations to the fitting of the data to a systematic personality theory framework, usually of a psychoanalytical nature. Despite the fact that more standardized techniques of observation, such as projective and objective personality tests, have been available for many years, only recently have some few studies been reported which present such "objective evidence" as these tests can yield. The general aim of most of these studies has been to assemble evidence for personality descriptions reported or suggested by the theories in the literature. The method used in these studies has been to assemble test data from a given psychosomatic population, to compare it with data from an actual or implied control population, and to interpret these results in terms of the personality characteristics described in the literature.

The purpose of this study is primarily to determine whether different psychosomatic populations can be differentiated from each other and from psychiatric and control groups by means of Rorschach test scores. Comparisons of Rosenzweig Picture Frustration Study scores will be reported by the authors in another study, and questionnaire and self-rating technique comparisons are already available (14). The present study is concerned only secondarily with obtaining evidence to confirm theoretical viewpoints in the literature. However, a study of this type is in effect a test of one of the important hypotheses about psychosomatic illness and personality relationships, namely, that each psychosomatic syndrome is accompanied by certain specific and differentiable personality characteristics (1, 24).

METHOD

For the purposes of this study, we selected two psychosomatic groups as examples: patients with duodenal ulcer and patients with ulcerative colitis. These two groups were selected for a number of reasons. First, they are available in

[1] Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinions or policy of the Veterans Administration.

[2] From the Psychiatry and Neurology Unit, Medical Division, Brooklyn Regional Office, Veterans Administration. The authors wish to express their gratitude to Dr. Bernard Locke for his cooperation in the undertaking of this study.

adequate numbers. They are easily identifiable and easily differentiated from each other on a physical basis in that a different body organ is involved in each syndrome. Evidence in the literature indicates that the two illnesses appear to be mutually exclusive (17) although the illnesses occur in the same organ system. Moreover, in the psychoanalytical classification of psychosomatic illnesses, Alexander (1) reports these two illnesses to be found in two different character types: oral and anal. Personality traits of the two groups are reported by analysts to be different. On these grounds, there would seem to be a likelihood that these two groups could be differentiated by means of their responses to personality tests.

Subjects

In the present study, there are four groups of subjects. Two were experimental groups, 25 patients diagnosed as having duodenal ulcer, and 25 patients diagnosed as having ulcerative colitis. Two groups were used as control groups. These were 25 patients diognosed as having anxiety neurosis, and 50 "non-psychosomatic" patients hospitalized for pilonidal cyst or inguinal hernia. All patients were white male veterans of World War II, between the ages of 20 and 40, having completed at least an eighth grade education. Three groups (duodenal ulcer, ulcerative colitis, and "non-psychosomatic") were selected at a V. A. general hospital. These patients were the first of their diagnostic category who met the criteria and who entered the hospital after January 1, 1949. The anxiety neurotics were the first 25 patients meeting the criteria at a V.A. mental hygiene clinic after October 1, 1949.

"Peptic ulcer" is a generic term for ulceration occurring in the stomach, duodenum, and jejunum. Of these, by far the largest frequency of ulceration occurs in the duodenum. However, many studies fail to differentiate the site of the ulcer in selecting subjects. The 25 patients in this study had both as their entering and their final hospital diagnosis "duodenal ulcer." "Ulcerative colitis" refers to ulceration of the colon. There are some psychological studies on patients with mucous or spastic colitis. However, neither these studies nor their results will be treated here because ulcerative colitis is considered to be a separate and distinct disease category in medical terminology. All 25 patients in this group had as their initial and final hospital diagnosis "ulcerative colitis," thus ruling out any parasitic causation for the ulcer. No patient was admitted to either of the two above groups who had concomitantly any other major disease diagnosis or psychiatric history or complaints. These precautions were taken to obtain as uncomplicated a series of cases as it was possible to obtain.

The cause of duodenal ulcer and of ulcerative colitis is unknown although the literature presents many and varied theories. Many writers ascribe psychogenic causation or concomitant psychological difficulties to these two syndromes. Both are generally considered to be "psychosomatic" illnesses (25). Although the personality characteristics ascribed by the literature to each group overlap somewhat, generally the writers stress different characteristics for each group. For example, the duodenal ulcer patient is generally described as being hard-driving, strongly ambitious, self-assertive, overtly active, and covertly passive (7, 21, 22, 24, 26).

The ulcerative colitis patients are described as being passive, insecure, shy, sensitive, moody, lacking in energy, and resentful (4, 8, 23). Whatever the specific personality constellation reported, all writers agree that these patients have severe personality problems. Many writers consider these two illnesses to be "organ neuroses" or to be a substitute for a functional neurosis (1, 2). In view of both the findings and their theoretical interpretations, the question arises concerning differences in personality characteristics between these psychosomatic patients and those considered to be neurotic, who do not have demonstrable organic illness or physical complaints similar to those of the psychosomatic groups.

Therefore, two contrasting control groups were selected. The first consisted of 25 patients who were diagnosed as anxiety neurotics on the basis of psychiatric interviews and physical examinations. No patient was admitted to this group who had ever been hospitalized in a psychiatric hospital, who had a history or present complaints of specific gastro-intestinal disorders. As a hospitalized control group, we selected patients who were being treated for disorders that have not been considered in the literature to be markedly affected by emotional states. The control group of 50 was composed of equal numbers of patients with pilonidal cysts and inguinal hernias. Neither disorder has been classified in the literature as psychosomatic. Moreover, none of the patients in this group had a history of psychiatric or psychosomatic disorder.

PROCEDURE

The Rorschach test was administered as part of a larger battery of psychological tests and procedures. The entire battery of tests and related studies of these groups of patients are reported in (13, 14). Half of the patients were tested by one author, and half by the other. Both authors used the standard method of administration of the Rorschach (12), and devised a standardized system of inquiry for determinants so that administration and inquiry would be as similar as possible. The responses were scored according to Piotrowski's (19) scoring system which was adopted for simplicity of scoring. The complete Wechsler-Bellevue Form I Scale was administered to obtain the I.Q.'s which were used in the study.

TREATMENT OF DATA

In view of what has been said above about the nature of the experimental groups, it is the purpose of this study to see if the groups involved can be differentiated *as groups* by means of Rorschach test scores. As usual, we are using the Rorschach test scores as convenient summaries of certain types of behavior in the Rorschach test situation. If there are systematic personality differences between these groups, these differences should also be revealed in their Rorschach behavior. For the purposes of this study, the authors are examining all aspects of the Rorschach responses that are quantifiable. We compared all Rorschach scores in the adopted scoring system. However, since many content categories were given infrequently, it was not possible to treat these statistically.

With this in mind, our treatment of the data was as follows. For each of the scoring categories and behavior characteristics (e.g.-initial reaction time) which were quantifiable, we compared mean scores by the *t*-test and the Variance Ratio (*F*). The comparison of certain scores which occur infrequently and for which the use of the mean

TABLE I—Means and Standard Deviations of Wechsler-Bellevue I IQ and of Rorschach scores for the four patient groups.

Test Scores	Groups							
	Duodenal Ulcer		Ulcerative Colitis		Anxiety Neurotic		Controls	
	M	SD	M	SD	M	SD	M	SD
Wechsler-Bellevue I IQ	109.08	10.67	119.36	11.12	115.56	9.00	113.10	11.67
Rorschach Scores:								
No. Responses (R)	17.76	8.91	26.40	13.17	23.80	10.87	19.96	10.45
% R to cards 8, 9, 10	29.48	7.58	34.48	10.23	33.24	8.04	33.30	9.77
% R to color cards	51.36	10.13	55.00	7.46	52.32	6.80	52.88	9.40
Initial Reaction Time (IRT)	17.04	9.78	14.92	6.86	18.12	12.43	14.96	7.47
IRT, cards 8, 9, 10	21.32	14.79	16.16	7.88	17.72	11.60	17.14	11.33
IRT, non-color cards	15.92	9.76	15.52	9.34	18.40	13.84	14.70	9.77
IRT, color cards	18.08	12.03	14.20	6.01	17.40	12.69	14.88	8.13
Time per response	31.96	14.41	29.60	8.58	35.56	15.70	30.34	12.38
W	7.56	5.09	6.40	3.22	6.64	3.22	7.00	3.48
W%	44.04	18.48	30.96	21.82	33.64	20.81	38.90	21.00
D	8.68	5.33	15.08	9.28	13.32	7.80	10.82	7.77
D%	46.80	17.00	53.24	18.35	53.40	17.54	50.88	17.14
d	1.60	1.60	4.68	6.24	3.76	6.00	2.14	2.57
d%	9.12	6.55	15.28	14.36	12.92	13.56	9.50	9.37
S (all types of "S")	1.20	1.55	.72	1.00	1.29	1.37	1.24	1.90
M	2.16	1.91	3.16	2.33	3.20	2.98	2.34	1.94
M%	11.48	6.37	13.04	8.57	13.68	7.80	11.68	8.17
FM	5.88	2.97	4.44	2.00	5.76	3.69	5.24	3.38
m	.36	.69	1.04	1.18	.68	1.22	1.04	1.67
F	7.44	4.19	14.88	10.12	12.36	7.72	9.64	6.41
F%	42.84	18.11	52.20	17.20	51.08	16.44	48.04	15.27
F+%	89.96	13.48	83.20	19.09	87.84	11.24	84.46	18.91
Sum of color responses	2.34	2.70	3.30	3.47	2.54	2.28	2.46	2.16
FC	.52	1.03	.84	1.22	.64	.74	.44	.73
CF	1.88	2.12	2.72	3.07	2.04	2.13	2.12	2.00
A%	65.00	13.74	57.24	14.04	52.60	12.43	53.62	16.15
P	6.52	2.83	7.40	2.58	6.52	1.72	6.26	2.68
P%	39.92	13.26	33.88	17.01	31.80	13.31	34.66	15.15
Fc (all shading responses)	1.72	2.59	2.16	2.62	2.72	3.12	2.00	2.43
Fc' (all "black" responses)	.76	1.03	.72	.96	1.32	1.64	.96	1.64
Anatomy	.44	.70	1.20	1.65	1.76	2.01	1.18	1.87
Human responses	2.64	2.54	5.24	4.39	4.64	3.61	2.98	2.58

might not be representative was also made by comparing the ratios of the difference in percentages to the standard error of the difference (28). Thus comparisons of both kinds were made for certain scores. Where there was reason to believe that a significant difference was a function of variables (e.g.-intelligence) other than that being studied, an analysis of covariance was made (15). The authors are aware that certain assumptions are implicit in their use of the *t*, *F*, and covariance techniques, as Cronbach (5) and others have pointed out. In assuming the equality of units, we are following the common nomothetic procedure which is used in dealing with data from personality inventories and intelligence tests.

RESULTS

The means and standard deviations of Wechsler-Bellevue Form I I.Q. scores and of 32 of the 40 Rorschach scores and ratios examined are reported in Table I. (For the other 8 scores, see Table III). The results of *t*, *F*, and covariance analysis derived from these findings are reported in Table II.

TABLE II—Significant results of *t*-tests and of Variance Ratios (*F*) made between each pair of groups (continued)

Test Scores		C-AN	C-UC	C-DU	AN-UC	AN-DU	UC-DU
Wechsler-Bellevue I IQ							
	t		2.20*			2.27*	3.26**
	F						
Rorschach Scores							
R	*t*		2.27*†			2.11*†	2.66*†
	F						2.19*
%R to cards 8, 9, 10	*t*						
	F			3.81**			
%R to color cards	*t*						
	F	1.91*				2.22*	
Initial RT	*t*						
	F	2.77*	1.19*		3.28**		2.03*
IRT, cards 8, 9, 10	*t*						
	F		2.03*		2.17*		3.52**
IRT, non-color cards	*t*						
	F				2.20*	2.01*	
IRT, color cards	*t*						
	F	2.43**	1.83*	2.19*	4.46**		4.01**
Time per response	*t*						
	F				3.35*		2.82**
W	*t*						
	F			2.15*		2.50*	2.28*
W%	*t*						2.24*†
	F						
D	*t*					2.44*	2.95**
	F		2.07*	2.12*		2.14*	3.03**
D%	*t*						
	F						
d	*t*		2.44*				2.35*
	F		5.90**	2.58**		14.07**	15.21**
d%	*t*		2.06*				
	F	2.09*	2.35**	2.05*		4.29**	4.80**
S (all types of "S")	*t*						
	F	1.93*	3.62**				2.40*
M	*t*						
	F	2.37**				2.43*	
FM	*t*						
	F		2.85**		3.40**		2.20*
m	*t*						2.43*
	F	1.87*		5.95**		3.19**	2.97**
F	*t*		2.69**‡§			2.75**‡§	3.32**‡§
	F		2.49**	2.34**		3.40**	5.84**
Sum of Color R	*t*						
	F		2.59**		2.31*		
FC	*t*						
	F		2.84**		2.72**		
CF	*t*						
	F		2.36**		2.08*		2.09*
A%	*t*			2.98**‡		3.27**‡	
	F						
P	*t*						
	F	2.42**			2.24*	2.70**	

TABLE II *(continued)*

Test Scores		C-AN	C-UC	C-DU	AN-UC	AN-DU	UC-DU
P%	*t*					2.12*	
	F						
Fc' (all black R's)	*t*						
	F		2.91**	2.52**	2.92**	2.54*	
Anatomy	*t*					3.07**	2.05*
	F			7.22**		8.26**	5.60**
Human responses (all)	*t*	2.24*§	2.76**‡§			2.20*§	2.50*§
	F	1.96*	2.90**			2.01*	2.98**

TABLE III—Significant critical ratios of differences in proportions of the occurrence of certain Rorschach scores and ratios between each pair of groups.*

	Pairs of groups compared					
Test scores and ratios	C-AN	C-UC	C-DU	AN-UC	AN-DU	UC-DU
M (0-2 vs. 3 or more)					.05†	
C (presence vs. absence)				.05†		.05†
Anatomy (presence vs. absence)		.05‡			.05†	
Sex responses (presence vs. absence)		.01‡			.01†	.05†
W:M (greater than 2:1 vs. 2:1 or less)					.05†	.05†
M:FM (M equal to or greater than FM vs. FM greater than M)						.05†

* The following scores and ratios were compared without significant results: S, m, FC, CF, Rejections (presence vs. absence of these types of responses); M:C (M equal to or greater than C vs. C greater than M); CF:FC (CF greater than FC vs: FC equal to or greater than CF); H plus A:Hd plus Ad (2:1 or greater vs. less than 2:1).

† The DU group gives a greater proportion of 0-2 M's, of FM greater than M, of W:M greater than 2:1; and a lesser proportion of C, Anatomy, and Sex responses than the other member of the pair.

‡ The AN group gives a greater proportion of Anatomy and of Sex responses than the Control group.

* Significant at the 5% level.

** Significant at the 1% level.

† Covariance adjustment for differences in intelligence reduces differences to a non-significant level.

‡ Covariance adjustment for differences in intelligence reduces significance to 5% level.

§ Covariance adjustment for differences in number of responses reduces difference to a non-significant level.

The results of the analysis of Rorschach ratio scores and in infrequently occurring scores by the comparison of the ratio of difference in percentage to the standard error of the difference (28) are presented in Table III.

An examination of Table II reveals that the following comparisons by *t* yielded differences at the .05 level of confidence or better: between the ulcerative colitis and the control groups, R, d, d%, F, H+Hd; between the duodenal ulcer and the control groups, A%; between the duodenal ulcer and the anxiety neurotic groups, R, D, F, P%, At, A%, H+Hd; between duodenal ulcer and ulcerative colitis groups, R, W%, D, d, F, m, At, H+Hd; and between the anxiety neurotic and control groups, H+Hd.

However, one of the assumptions implicit in the use of the *t*-test is the homogeneity of the variances of the two groups compared. The homogeneity of variance of the scores was tested by Snedecor's *F* test. Of the listed significant *t* comparisons, significant *F*'s (.05 or better) were not found in the following: between the ulcerative colitis and control groups, R; between the duodenal ulcer and control groups, A%; between the duodenal ulcer and anxiety neurotic groups, R, A%, P%; between the duodenal ulcer and ulcerative colitis groups, W%.

In view of the fact that there are significant differences in IQ between certain of the groups (Table II), analyses of covariance were performed to determine whether these remaining Rorschach score differences were a function of IQ differences. The covariance analyses indicate that, when IQ differences are taken into account by this method, the differences in R and W% become insignificant. Likewise, when differences in R are considered by this method, F and H+Hd differences become insignificant. The significant *t*'s remaining are: A% between the controls and the duodenal ulcer group, A% between the anxiety neurotic and duodenal ulcer groups, and P% between the anxiety neurotic and duodenal ulcer groups. A% differences are unaffected by differences in IQ. The significant variance ratios (summarized in Table II) indicate that the Rorschach test behavior of the duodenal ulcer group was more homogeneous with reference to these test scores than that of any of the other three groups.

Table III lists significant results obtained by the method of comparison of differences in percentage (28). They principally concern comparisons between the anxiety neurotic and duodenal ulcer groups, and between the ulcerative colitis and duodenal ulcer groups.

DISCUSSION

The results of the study can be grouped into three categories for purposes of interpretation. First, there are intelligence differences, and the way in which they are reflected in Rorschach scores. Secondly, there are the differentiating Rorschach scores unaffected by intelligence differences, and finally, the differentiating measures of variability.

In this study, we found the ulcerative colitis group to have a significantly higher intelligence score than either the control or duodenal ulcer group. The duodenal ulcer group had a significantly lower score than the anxiety neurotic group. In other words, the ulcerative colitis group stood out as the brightest, and the duodenal ulcer group as the least intelligent. The results on the duodenal ulcer patients may seem surprising in view of some of the psychiatric literature in which ulcer patients are frequently characterized as white-collar, business, or professional people; successful, driving, versatile, with the implication of a comparatively higher degree of intelligence (7, 22, 23, 26). However, our findings are in general agreement with the few studies in the literature which report intelligence test scores. Ruesch (21) in a study of civilian and Naval personnel with duodenal ulcers found Wechsler-Bellevue short form IQ's of 107 and 111 in his two groups which compare quite closely with the mean of 109 for the duodenal ulcer group in this study. Osborne *et al.* (18) found a mean Wechsler-Bellevue IQ of 93 in 13 cases of duodenal ulcer and 2 cases of gastric neurosis. Hecht (10)

found a mean IQ of 111 in a group of 25 male duodenal ulcer patients. He also found no significant differences between the duodenal ulcer patients and members of other groups (colitis and hypertension patients). Wiener (27), using group intelligence tests, reports his duodenal ulcer group to have significantly lower scores than his control group and to be second lowest in intelligence of his 8 groups.

Many writers in the psychiatric literature refer to ulcerative colitis patients as being of high intelligence (4, 6, 8, 23). On the basis of Rorschach interpretations, Mahoney (16) classifies the intelligence of his 20 ulcerative colitis patients as ranging from average to very superior, with the median level being above average. Heath (9) reports a study of ulcerative colitis patients in which "80% had an IQ of 115 or more." Hecht (10) found a Wechsler-Bellevue I IQ of 113 in 25 male ulcerative colitis patients.

Can we consider the above findings to be universally valid for the patients in these two groups? The data in psychological test studies are consistent, but confined to a limited segment of the population. The present sample, Ruesch's, Osborne's, and Hecht's samples consist mainly of male white veterans of World War II, generally between 20 and 40 years of age, hospitalized in Armed Forces' or Veteran's hospitals, and presumably recruited from lower and middle socio-economic levels. Most samples are recruited from urban areas, except Osborne's which is Southern rural. Poser's study (20), which reported no intelligence differences between duodenal ulcer and control groups (no IQ data presented), recruits its samples from a comparable Canadian population. Where civilian populations are used, they seem to be drawn from similar segments of the population (16, 21). While many "clinical impressions" of professional, white collar, "Wall Street executive" patients are reported in the psychiatric literature, there seem to be no systematic psychological test studies from which comparable data can be obtained. There is always the possibility that our findings in the area of intelligence differences may be an artifact of a selection variable of which we are not aware. However, if future studies of samples from similar and other populations confirm our findings, as well as the trends reported in the literature, they will reveal the existence of a series of important relationships between intelligence and personality in these syndromes.

As we have reported above, many of the significant differences in Rorschach scores were found to be a function of differences in intelligence. However, many Rorschach scores which are known to be a function of intelligence did not yield significant differences in intergroup comparison (e.g. - M, m). Therefore, the manner in which intelligence differences are reflected in Rorschach score differences would seem to be worthy of attention. Wherever there is an IQ difference between two groups, there is a corresponding difference in number of Rorschach responses (R). In terms of conventional Rorschach meanings, R is taken to be some indication of "productivity" or "energy level." Using these terms, the duodenal ulcer group shows the least "productivity," and the ulcerative colitis, the most. However, the number of responses itself influences the production of other scoring categories. For example, the Rorschach form response, which differentiates the various groups from each other, is seen to be a function of number of re-

sponses, which is what one might expect. The "human content" response is also found to be a function of number of responses. From what we know of the Rorschach, one does not necessarily expect human content responses to increase with number of resposes. We might interpret the findings in this category to indicate that the duodenal ulcer group expresses a lesser interest in other people, and the ulcerative colitis group a greater interest than do the other groups. This fits into interpretations of other data to be discussed below.

Another way in which intelligence differences are manifested in Rorschach scores is in terms of the Rorschach location areas used. Greater productivity on the Rorschachs of the ulcerative colitis subjects is reflected in their responding to large and small details rather than to the whole blot. The duodenal ulcer group makes greater use of the whole blot (W) than does any other group (Table II). In terms of percentage of whole responses, again the duodenal ulcer group stands out, significantly so when contrasted with the ulcerative colitis group. Analysis of covariance indicates that there is an inverse relationship between W% and IQ. The differences in W are further reflected in the W:M ratio, by which the duodenal ulcer group is significantly differentiated from the ulcerative colitis and anxiety neurotic groups (Table III). A conventional interpretation would attribute "unrealistic strivings beyond their capacity" to the members of the duodenal ulcer group. A more general analysis might be made in terms of a greater interest in "accomplishment" on the part of these patients, and a lesser interest on the part of ulcerative colitis patients.

Seemingly unaffected by intelligence differences are Rorschach score differences which are conventionally considered to be measures of freedom of emotional and intellectual responsiveness. There is a strong tendency for the duodenal ulcer group to be differentiated from the other groups by these scores (Table II). The fact that the duodenal ulcer group gives more animal responses, more popular responses, fewer sexual responses, no "pure color" responses, and to reject more cards, would indicate their behavior to be more conventional, conforming, stereotyped, and repressed than that of the other groups. The tendency of the duodenal ulcer group to give fewer anatomy responses reveals a surprising lack of anxiety about bodily function. Generally, in terms of the measures of variability used (Table II), the duodenal ulcer group seems to be the most homogeneous group with reference to the Rorschach scores. While this may be a reflection of number of responses, it may also be a bona fide characteristic of duodenal ulcer populations.

When findings can be compared, our results are in general agreement with those reported by psychological studies in the literature. Frequently, comparisons cannot be made because the basic data is not reported (16), or is reported unsystematically (18), or scoring systems are not completely comparable (20). Differences in findings can be a result of differences in the selection of the psychosomatic group and/or the control group. For example, Osborne's (18) ulcer group includes two patients with gastric neurosis and no ulcer. Poser's (20) control group contains patients with illnesses frequently described as psychosomatic. More

TABLE IV—Means and SDs of Wechsler-Bellevue I IQ and of Rorschach scores where reported in the literature on Duodenal Ulcer groups.*

Test Score	Hecht (1949) N=25		Kaldegg (1950)† N=20		Osborne (1950) N=15		Poser (1951) N=25	
	M	SD	M	SD	M	SD	M	SD
IQ	111.3	11.8			93.0			
Rorschach Scores								
R	19.8	8.8	26.70	20.95	19.0		12.04	6.13
%R to cards 8, 9, 10	34.8	8.9	28.00	12.28	39.0		28.12	9.32
Initial RT					24.0		25.76	13.94
IRT, non-color cards					19.0			
IRT, color cards					29.0			
Time per response					41.0			
W	6.7	3.5	9.50	7.23	6.0		7.44	2.17
W%			40.00	23.01				
D	12.3	7.6	12.00	8.57	9.0		3.80	4.20
D%			45.75	19.28				
d	.6	1.2	3.70	6.39	4.0			
d%			12.80	17.64				
S	2.4	2.4	.70	1.35				
M	2.0	2.1	2.10	2.85	.87		1.00	.97
M%			7.75	7.22				
FM	2.9	1.3	2.30	1.95			3.28	2.27
m			.55	.69				
F			16.30	14.03	9.0		3.72	2.80
F%	40.5	16.2	61.40	19.69	47.0		29.52	13.30
F+%	96.1	6.4			85.0			
Sum of color responses			3.65	9.54				
FC	2.2	2.1	1.55	2.01			.60	.83
CF	1.5‡	1.5	1.50	1.78			.92	.88
C			.95	.97				
A%	49.2	18.5	40.90	21.01	47.0		48.92	14.04
P	5.1	2.1	3.80	1.84	5.0		4.32	1.44
P%			22.50	22.28				
Fc	3.6	3.1	3.25	2.68			1.08	.88
Fc'			.70	1.35				
Anatomy			1.10	1.45			.80	1.18
Human responses	2.7	2.8	5.40	8.79			1.04	.95

* See Table I for data from present study.

† These results were compiled by the present authors from individual records reported by Kaldegg and O'Neill.

‡ Hecht includes CF and C under CF.

frequently, no control groups are used (11, 16, 18). A further qualification must be made in assaying findings of studies such as these. As we have said above, there is the danger that some authors tend to become unduly enthusiastic about a few significant results without evaluating these in terms of the total number of actual and implied comparisons made.

Table IV contains a comparative presentation of the means and standard deviations of Rorschach scores as reported by Hecht, Kaldegg, Osborne, and Poser. Results from Kaldegg were compiled by the present authors from the individual case records given. While the table gives a rough idea of results, the reader is cautioned again that direct comparisons cannot be made because of the reasons given above. The incompleteness of the table reflects the need for more systematic reporting of basic data.

With regard to specific test findings, Poser, Ruesch, and Osborne report a tendency for their ulcer groups to give a greater proportion of whole responses than might be expected. Osborne points out that in his group of ulcer patients the W:M ratio suggests, " . . . unrealistic ambition and drive which are far beyond the subjects' creative ability." In addition, Osborne interprets his findings as revealing the typical constricted and inhibited protocol of the hysteric, with indications of a high degree of stereotypy and little capacity for originality. In addition, he describes the unusual number of duodenal ulcer patients rejecting Rorschach cards. As in the present study, Poser found a tendency for more animal responses in his ulcer group. Ruesch reports a small number of responses to the Rorschach blots, and many popular and conventional responses. Also in agreement with our findings, Osborne points out that: "Contrary to possible expectations, there was no evidence of preoccupation or overconcern with bodily functions, sex, anatomy, or health." Poser, too, reports few anatomy responses. Poser, Ruesch, and the present authors find a predominance of animal movement over human movement. This is generally taken to be a sign of immaturity. Kaldegg and Osborne also interpret their data for the duodenal ulcer group as indicative of immaturity. While this finding of animal movement greater than human movement is generally reported for clinical populations, it is not true of our other groups to the degree that it is true of the duodenal ulcer group. Another finding is the relative homogeneity of the duodenal ulcer groups' Rorschach scores when contrasted with those of other groups. Poser agrees with our report of it, and treats it as one of his most significant findings. Hecht's study, the only other one with comparable data, does not deal with this problem. Apparently, the only area of disagreement is on findings of "emotional lability" and "impulsivity" which Poser reports on the basis of color responses and reaction times. Although there was a tendency for our duodenal ulcer patients to give more CF than FC responses, we found this tendency in all groups. On the whole, the duodenal ulcer group gave fewer color responses and longer reaction times than other groups, except for the anxiety neurotic group.

We have not discussed the ulcerative colitis group at length because the duodenal ulcer group seemed to be differentiated more clearly, and because there are no directly comparable psychological test studies. Although Mahoney has examined 20 hospitalized ulcerative colitis patients, he has reported his Rorschach data in such a way as to preclude comparison with our data.

With regard to the broader problem of the study, the ability of an examiner to differentiate psychosomatic populations by means of Rorschach test scores, the authors draw two conclusions. First, in view of the number of comparisons made between the various groups, the finally remaining significant results are no more than one would expect by chance. Thus, if one adopts a stringent statistical criterion alone, Rorschach scores are unable to differentiate between the groups. However, the fact that the significant findings which were obtained seem to be in general agreement with the few studies reported and seem to bear some relationship to psychosomatic personality theories suggests that the present results could not be altogether attributed to chance. Therefore, while the

Rorschach test *per se* does not differentiate, certain scores or clusters of related scores suggest areas of personality which would offer promising leads for investigation. Present results indicate that, if differentiation is possible, it can be done best in terms of general response characteristics for each group rather than in terms of specific test scores.

Summary

The purpose of this study was to determine whether samples from different psychosomatic populations could be differentiated from each other and from psychiatric and control groups by means of Rorschach test scores. Four groups of subjects were used: 25 duodenal ulcer patients, 25 ulcerative colitis patients, 25 anxiety neurotics, and 50 "non-psychosomatic" hospitalized control subjects. Statistical comparisons of principal Rorschach scores were made between all pairs of subject groups. Differences were found in intelligence, in those Rorschach scores affected by intelligence, and in other Rorschach scores. The duodenal ulcer group stood out in terms of being most homogeneous and in terms of being most clearly differentiated from the other groups by the test scores. The results and their possible meanings were discussed as promising leads for areas of personality which would bear further investigation.

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Perceptual Consistency in Rorschach-Like Projective Tests[1]

ROBERT L. MCFARLAND, PH.D.
Veterans Administration Hospital, Palo Alto, California

The problem of formulating explicit theoretical bases for the Rorschach and other projective techniques has received increasing attention during recent years (1, 13, 14, 15, 17). The corollary problem, that of the creation of clearly defined test variables which may be derived from such theorizing, has been neglected to a considerable degree. Rather, much effort has been spent in seeking adequate validation of the present empirically derived Rorschach measures by several different experimental methods as indicated by Hertz (7), Macfarlane (12), and Schneider (16). Thurstone (18) has criticized Rorschach workers on a number of counts. He was concerned among other things with the fact that Rorschach workers were not interested in developing new ways of assessing personality structure. This criticism also seems directed at Rorschach workers' apparent unwillingness to develop new methods of assessing behavior within the Rorschach situation itself. Unfortunately for them, the numbers of clinical experimental studies increase in which the present scores are found statistically unreliable, not valid, or in which demonstrable relations exist which cannot be explained by traditional Rorschach theory (2, 9, 10, 19).

The study presented here was undertaken on the basis of the following assumptions: In projective tests like the Rorschach we seek certain measures which we assume can be generalized beyond the test situation itself, i.e., we assume that the testing stimuli are themselves representatives of a broader class of perceptual stimuli and that the responses of the S to these particular stimuli are consistent with the responses which he would give to other projective or perceptual tasks. From this point of view the possible adequacy of projective tests —or more specifically, of measures obtained from projective tests—is partly a function of the extent to which the responses of an S to the stimuli of a given test can predict the responses he would give to the other appropriate perceptual tasks. Conversely, when an S's responses are inconsistent with regard to a certain variable in several appropriate perceptual tests, this variable should seemingly have little utility either as a test variable or as a perceptual variable.

The purposes of this study were: (1) to develop several variables which would appear to be consistent in the sense that Ss' scores on them, obtained from several different test instruments, would be highly intercorrelated; and (2) to test the consistency of these variables. Obviously variables which are necessarily unique to a specific measuring instrument cannot be tested for the extent to which they measure consistently a perceptual

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response tendency in various situations. An example of such restriction might be the movement responses on the Rorschach. It was felt necessary therefore to conceive of general variables which could be measured in several different types of tests. This is not stated as an apology for not considering in this study such Rorschach variables as M, CF, FV and the like; rather it is felt that one of the better pragmatic criteria for the selection of test variables is whether or not they can be measured by several different techniques.

METHOD

Design

The general design of the study involved the development of six variables, the measurement of these variables in each of four different tests, appropriate statistical analysis to determine the consistency of these measures as a method of estimating the generality of the given variables, and further analysis to determine the amount of intra-correlation between these six measures on each of the four tests.

Tests Employed

The four tests used were: (1) a modified Rorschach, (2) a modified Behn - Rorschach, (3) a Picture Title Test, and (4) an Object Recognition Test. These tests may be described briefly as follows:

The modified Rorschach and modified Behn-Rorschach tests are variations of the two standard series. Each inkblot plate was photographed in the regular sequence on a 35 mm color film strip. Each film frame was then projected onto a screen for seven seconds. Standard Rorschach and Behn-Rorschach instructions were employed with the exception that the S was informed as to the length of the exposure time and Ss were limited to only one response per each stimulus *area* selected by them. After completing the Free Association phase of the examination, the Ss were handed the standard Rorschach and Behn-Rorschach cards one at a time, and the Inquiry was then conducted in the standard clinical manner.

The Picture Title Test consists of 102 pictures which were reproduced on a 35 mm film strip and projected onto a screen for seven tenths of a second. Each S was instructed to give titles to as many pictures as he could and to tell what aspects of the pictures suggested the titles to him. The following steps were employed in developing this test:

Two hundred and thirty-seven pictures of wide contextual range were secured from several periodicals and were re-photographed on a film strip. To reduce costs of this procedure the original photographs were classified by size and were photographed in a systematic order. These photographs were then presented at .7 second exposure speeds to a group of female clerical employees and to a group of male psychologists. They were asked to give a title to each one of the pictures. These results were tabulated and analyzed to determine the best possible series of approximately one hundred photographs. Each picture was rated on the basis of the above data as to its possible chances of being familiar to a group of female VA employees and to its chances of being given the same title by a high proportion of the group. The final series of 102 pictures includes 75 pictures rated as described above and 27 randomly selected pictures which could not be so rated. Both series were included for the purpose of determining what differences, if any, existed between pictures which

could be rated and those which could not.

The fourth test, the Object Recognition Test, was also developed by this experimenter. This test consisted of 60 objects mounted on trays which were presented in an Object Viewing Box with a fixed exposure speed of .11 seconds. (The various speeds used for the four tests were controlled by a tachistoscopic timer). These objects were selected with the purpose of ascertaining: (1) Varying ranges of frequency with which they would be selected for response, and (2) Varying ranges of different percepts in the responses to the respective objects. To do this, the following developmental procedures were carried out:

Two groups of subjects, one a sample of clerical female workers and one group of male psychologists, were asked to list forty-five object-names roughly classified into five categories as to their chances of being quickly and accurately named by VA female employees. After tabulation of these object-names, those that referred to objects which were too big, too difficult to obtain, too similar to other objects, too indefinite, or too expensive were eliminated. The reliability of the ratings of the remaining object-names was determined by having them rated by another group of Ss. On the basis of these ratings object-names were eliminated which had very inconsistent ratings. E then collected as many of the concrete objects which were consistently named and rated as he could. One hundred-twenty such objects were thus obtained. These objects were then administered in a random order to four psychologists. On the basis of this experience, the instructions were worked out with their assistance and the final exposure speed set at .11 seconds. This entire series was then given to five psychologists and five clerical workers. These data were analyzed and 60 of the objects were retained for the final form of the test. These objects were selected so as to insure a varying range of expected responses to them and to insure varying ranges of different percepts contained in responses to the respective objects.

Test Equipment

A special tachistoscopic timer was designed for this experiment. This instrument was used in connection with a modified Whitco Projector and an Object Viewing Box for the presentation of the various test material.

Experimental Design

The four tests described above were individually administered to 48 female VA employees who volunteered to participate in this study. This sample did not include Ss in the pilot studies in which the experimental tests were developed. The order in which these tests was presented to each of the Ss was based on the random assignment of one of eight sequences of presentation to each S. The eight orders were based on two Bugelski's systematic Latin squares (5, 6) which insured that each test would equally often precede the other tests. The instructions pertaining to each test were read to each S.

Scoring of the Protocols

The data for all tests were first scored to determine the *Basic Percept* of each response. Basic Percept has been defined for this study as, "The central percept *verbalized by the S* which indicated the nature, meaning, order and/or the class of objects seen by him." The exact titles given by the Ss in response to

the photographs presented in the Picture Title Test were assumed to be the Basic Percepts of the Ss' responses to those stimuli. A formal set of rules was carefully followed to categorize and to combine the data of each stimulus on the various tests so that norms could be established for them. See McFarland (11) for more complete discussion. All responses to each of the four tests were scored separately in terms of the following six measures:

(1) *Total Response Variable* (TR score). This score was defined by the total number of scorable verbal responses given to any test by each S. It is assumed that TR score is a measure of productivity.

(2) *Percept Variation Total Score* (PV score). The following steps were carried out to secure a PV score for each S: Each response to any stimulus on the four tests was analyzed to establish its Basic Percept. All responses to a given stimulus were then examined and the total number of different Basic Percepts was recorded. This numerical value was then assigned to each S responding to that stimulus. Thus each response on a given test received a PV score. A Percept Variation Total Score for a given S's responses to any one test was obtained by merely adding up his various PV scores. In this fashion each S received a Percept Variation Total Score on each of the four tests.

Tentatively, one can conceive of a PV score as an indication of the potential range of percepts available to the individual in dealing with perceptual tasks. It is also possible to conceive of this score as a potential measure of the "engrams" available to the individual. A third manner of conceptualization of this measure might suggest that it is a measure of intellectual drive. At this point we can merely describe how we define and score the measure; further research must be carried on to determine its psychological determinants.

(3) *Selection Variable Score* (SV score). This score was defined by the proportion of Ss selecting the same stimulus for response regardless of the content of their responses. The percentage figure thus derived was assigned to each response given by an S on each of the four tests. The median SV score for the S's performance on each test was then taken as the best measure of central tendency and was used to characterize the S on each test. Again it should be stressed that the content of S's responses in no way entered into the determination of SV scores.

This measure seemingly represents a logical, more quantified extension of Beck's system (3) of establishing D and Dd areas on the Rorschach Test on the basis of frequency of use. It is assumed that this measure indicates whether the S responds to more ambiguous or to less ambiguous stimuli then do other Ss.

(4) *Average Percept Variation Score* (APV score). To establish an APV score for each S the following steps were carried out: The number of different Basic Percepts contained in all the group's responses to the various stimuli on the four tests was determined as was done for PV scores. This number for each stimulus was then divided into the total number of responses actually given to that stimulus. The resulting ratio was then taken as an APV score for the given stimulus. On the basis of the individual S's responses to a given test, the APV score for each stimulus selected by him was recorded. The median APV score for each S on each of

the tests was then taken as the best representation of his performance and was used as such. Since by defining operations APV scores indicate the average number of subjects giving responses containing the same Basic Percepts to the same stimulus, this measure, it is felt, indicates the commonality or idiosyncratic nature of Ss' responses. While APV scores are similar to PV scores they seemingly point up more adequately how many of the stimuli to which S reacts are perceived in common fashions regardless of the frequency with which the stimuli are selected for response.

(5) *Content Variable Score* (CV score). This score was defined by the proportion of Ss giving the same Basic Percept to the same stimulus. Such percentage values were determined for all the different Basic Percepts to every stimulus on the four tests. All responses of an S can then be characterized by a Content Variable Score. The median CV score for each S's response to each test was then taken as the best measure of central tendency to differentiate his responses from those given by others. It is assumed that CV scores characterize the S's responses in terms of their commonalty or uniqueness of content.

(6) *Content Agreement Total Score* (CA score). The CA score was defined by first determining the number of times that *other* Ss responded to a given stimulus with the same Basic Percept as did the given subject. The Content Agreement Scores for every response by an S for each test were then summed. This yielded the Content Agreement Total Score for each S on each test. CA scores it is felt yield a measure which has much in common with CV scores but statistically is more desirable inasmuch as it is a total score, not a ratio, and that in addition the given S's response is not included in the number finally assigned him as a CA score.

Analysis of Data

Rank correlations were computed on the six measures of each S's performance on the four tests. It should be noted that for three variables, i.e., CV scores, SV scores and APV scores, median scores were employed to characterize the S's performance. On the other three variables (TR scores, PV scores and CA scores) a summed value was taken as representing an S's performance. These data are presented in Table I. A further analysis was carried out to determine the relative degree of consistency of each of our six measures when compared with other measures. A coefficient of concordance (W) as developed by Kendall (8) was determined for each measure. These data are also included in Table I. The intra-test correlations for these six variables were computed on each of the four tests. Inspection of these data indicated that the Total Response Variable was highly correlated with the other five variables so it was partialled out. The remaining intra-test correlations on each of the four tests are presented in Table II.

Certain other analyses were carried out which (1) insured homogeneity of our sample of subjects, (2) indicated that fatigue tended to depress TR scores on the Picture Title Test due to the length of the test (102 pictures), (3) demonstrated that order of presenting the tests to the Ss did not affect performance on the modified Rorschach or Picture Test but did affect performance by reducing TR on the modified Behn-Rorschach and the Object Recognition Test,

TABLE I—The Matrix of Rank Order Correlations and the Coefficients of Concordance for Six Major Variables Based on 48 Subjects' Responses to Four Projective Tests

Variable	Rank Order Correlations on the Mod. Rorschach and the Modified Behn-Rorschach	Rank Order Correlations on the Mod. Rorschach and Picture Title Test	Rank Order Correlations on the Mod. Rorschach and the Object Recognition Test	Rank Order Correlations on the Mod. Behn-Rorschach and the Picture Title Test	Rank Order Correlations on the Mod. Behn-Rorschach and the Object Recognition Test	Rank Order Correlations on the Picture Title Test and the Object Recognition Test	Coefficient of Concordance	Chi Square
Percept Variation	.62**	.65**	.44**	.46**	.32*	.37**	.61**	114.20
Total Response	.68**	.61**	.30*	.47**	.33*	.42**	.60**	112.80
Average Percept Variation	.54**	—.03	.45**	—.02	.09	.31*	.43**	81.12
Selection Variable	.64**	.10	.12	.09	.07	.32*	.41**	76.76
Content Variable	.42**	—.05	.14	.05	.06	.31*	.37*	68.94
Content Agreement	.29*	—.13	.10	.07	.15	.13	.33†	61.43

**Denotes significance at 1% level or better †Not considered high enough to be Significant but indicative of trend
*Denotes significance at 5% level or better

TABLE II—Intra-test Rank Order Correlations of Six Variables With the Influence of Productivity Partialled out (N=48)

VARIABLES CORRELATED	Modified Rorschach	Mod. Behn Rorschach	Picture Title Test	Object Recog. Test
PV Total Score - APV Score	—.07	—.28	—.14	.50**
PV Total Score - SV Score	—.23	.50**	.21	—.46**
PV Total Score - CV Score	—.62**	—.52**	—.12	—.08
PV Total Score - CA Total Score	.10	.15	—.08	—.06
APV Score - SV Score	—.97**	—.67**	—.31*	—.70**
APV Score - CV Score	.16	.11	.19	—.08
APV Score - CA Total Score	—.43**	.39**	—.22	—.40**
SV Score - CV Score	—.45**	—.68**	—.23	—.11
SV Score - CA Total Score	—.29*	.10	—.27	.33*
CV Score - CA Total Score	.16	.27	.79**	.62**

**Denotes significance at 1% level or better (requires r $\geqslant$ .368)
*Denotes significance at 5% level or better (requires r $\geqslant$ .294)

(4) indicated that reversing the presentation order of the Picture Title Test did not significantly affect TR scores, and (5) showed that rated and unrated photographs on the Picture Title Test were not significantly different. (See McFarland (11) for rationale, techniques and results of these data. They are not of major concern for this paper).

DISCUSSION

The data presented in Table I indicate that an individual tends to respond consistently to inkblots,

pictures and small concrete objects (1) in terms of how much he responds (Total Response Score), and (2) in terms of the relative range of interpretations contained in a group's responses to stimuli to which the given S also responds (PV Score).

Productivity, which seemingly is measured by Total Response Variable, is a familiar psychological concept. However, the second variable, the PV score, needs further explanation. We have assumed here that stimuli differ as to the probable number of concepts which can be applied to them by any one group. It is possible to conceive of a stimulus receiving only one "percept-label" by a group and on the other extreme we can conceive of a stimulus receiving a different percept each time it is selected by an S. Operationally, we can characterize the stimuli in any test by the number of different percepts contained in responses to it by any given group of Ss. If we then assign to each stimulus a value indicating its range of content interpretation we can assign that value to each S selecting that stimulus. Hence we can characterize the S's performance on all four tests in terms of these scores.

This procedure was carried out here and median PV scores for each S were shown to be highly consistent on the four tests. If an S selects stimuli in one test which elicit from the group a wide range of percepts, then he will also tend to select similar stimuli on other tests; i.e., – there also he will select stimuli which elicit a wide range of percepts from the group. The converse also would be true – if S selects stimuli which elicit a narrow range of percepts from the group on one test, he will do similarly on other tests.

As can be seen by inspection of Table I, the other four variables demonstrate consistency between the various test performances of the Ss but to a lesser degree than in the case of TR and PV scores. There was at least one significant correlation between Ss' performances on pairs of tests for these last four measures. In descending order based on frequency of significant correlations the measures emerged as follows: Average Percept Variation Scores, Selection Variable Scores, Content Variable Scores, and Content Agreement Scores.

We can conclude that TR and PV scores seemingly measure aspects of perceptual behavior which occur in a number of test situations. The other four measures are more specific to certain tests and have less general significance. We can then tentatively assume that PV and TR scores meet the criterion we have set in our search for operational measures which have demonstrable meaning in several different kinds of situations.

These measures also can characterize the test stimuli in a psychologically meaningful manner. By using these variables we can describe test structure in objective quantified terms and no longer do we have to restrict ourselves to talking in terms of the dichotomy of structured vs. unstructured tests. Instead we can speak of the range of stimuli contained in any given test. For example, we can refer to the Rorschach, not as an unstructured test, but rather as a test containing a wide variety of test structures. While the Rorschach may not be as representative of the multitude of visual perceptual situations as, say, Brunswik (4) would wish, it can be demonstrated by use of the measures presented here that the Rorschach test does not con-

tain an overly narrow range of stimuli.

The intra-test correlations for these six variables on the four tests were computed. Inspection indicated that these variables were highly inter-correlated, particularly in relation to the Total Response Variable. Seventeen of twenty correlations involving TR scores were significant at least at the five percent level. It is clear that TR scores or productivity grossly affect the other five variables. Consequently, it was felt that the effect of TR scores had to be partialled out statistically before we could meaningfully inspect the intra-test relations of the remaining variables. This was done and the data are presented in Table II. Eighteen of the forty correlations remain significant at least at the five percent level.

Average Percept Variation scores (APV) and Selection Variable scores (SV) are significantly correlated in a negative direction on all four tests when either TR normally varies or TR is held statistically constant. This indicates that Ss who tend to select stimuli frequently responded to by others give percepts that are fairly unique. Conversely the Ss who select stimuli seldom chosen by others are likely to use common percepts. The logical assumption here would be that persons who give common percepts would use frequently chosen stimuli or conversely Ss that choose rare stimuli would respond to them by giving unusual percepts. Unfortunately this assumption does not hold true with this sample of subjects and tests. Possibly this finding suggests that the normal individual maintains here two differing but essentially counterbalancing perceptual mechanisms such that if he behaves in either a too conventionalized or a too idiosyncratic manner along one dimension, this behavior will be balanced by the other perceptual mechanism.

There were no significant partial correlations between PV scores and CA scores nor were there any between APV and CV scores. As inspection of Table II indicates, there are other significant partial correlations for various pairs of scores on the various tests but no significant over-all trend can be determined.

At the present time little evidence can be presented as to the clinical usefulness or value of the two new tests presented here, the Object Recognition Test and the Picture Title Test. The Ss in both the pilot study and in the major study seemingly accepted these tests as being appropriate situations to measure how people see things and consequently seem to have face validity. Three other seemingly pertinent observations are presented below.

As E examined the data to the Object Recognition Test he noticed two extreme types of Ss' responses to the more unfamiliar stimuli. In one case the Ss seemingly resorted to much adjectival description of the objects without ever attaching an object-name to them. For example, "It is shiny, round, not too big, facing towards me – but I don't know what it is." The other type of response to a similar object might be characterized as a Nominative approach, or, in Rorschachers' terms, a cheap W response. An example – "It's a tool, some instrument, some gadget, but I don't know what it's used for."

A second observation also relates to S's performance on this test. The E was frequently accused of varying the exposure time although the exposure speed did not vary more than $\pm$ 5%. This usually occurred on those "hard" objects which were strange and unfamiliar and never

occurred on those objects which were quite easily recognized. This suggests an intimate relationship between judged exposure time and degree to which the stimulus is familiar to the Ss.

A third clinical observation relates to the data on the Picture Title Test. The task of assigning a title to pictures presented for .7 seconds is a fairly difficult one and demands seemingly a fairly high order of perceptual-conceptual skill. While the Ss strived to give a title to each picture so exposed they gave on the average titles to about one half of the pictures. Inspection of all the response data suggested a systematic but varying order of the responses to the rest of the pictures in which the Ss failed to give a title. Clinically these "no-title" responses appeared to be "tied" to the potential meaning or significance of the pictures in the same general manner as card rejections on the Rorschach or on Thematic Apperception Test. Tentatively it seems possible to categorize various "title" and "no-title" responses to these picture stimuli. In addition these categories seemingly can be operationally ordered from the least adequate level to the most adequate level of response defined in terms of meeting the requirements of the test instructions.

One such system of rating the level of response to the pictures and verbal illustrations of each proceding from least adequate to most adequate response might be: (1) Stimulus not seen ("Nothing there!"), (2) Stimulus seen but denied ("Saw something but I don't know what it is."), (3) Stimulus seen and described ("Saw a man and a dog but I don't know what they are doing. No title."), (4) Stimulus seen, described, action attributed ("Saw a man and dog. They're out hunting – but no title."), (5) Stimulus seen, described, action attributed, title given but then denied ("Saw a man and dog in the fields hunting. Call that 'Sport.' No, that's no good. No title."), (6) Stimulus seen, described, action attributed, "loaded" title given, then a more acceptable title substituted. ("Saw a man and dog out hunting. Call that 'Out to kill.' No, change that to 'Out Hunting.' That's a better title.")

A system of categorizing all responses to a projective test rather than scoring and tabulating only those responses which specifically meet the requirements of the test instructions seemingly would present a more adequate method for studying such concepts as "perceptual defense," "meaning of card rejections," and "the effect of anxiety" than has been found in the past studies of these concepts through or by projective tests. For example, utilizing the system described above, one might characterize the least adequate responses as the measure of most acute anxiety and the most adequate responses as demonstrating minimal anxiety. Such a scheme could then readily be validated against clinical criteria both in regard to degree of anxiety and to areas evoking anxiety. The Picture Title Test having as its task a seemingly difficult perceptual-conceptual, but easily recordable, response appears to be a more adequate experimental situation for investigating these problems than does the standard Rorschach situation.

Regardless of the clinical value of these two new tests, they do possess certain experimental advantages over the Rorschach and Behn-Rorschach. These advantages arise out of the fact that the objects and pictures lend themselves to much

more controlled variation than do the fixed inkblots. The pictures and objects can be presented singly or they can be grouped when presented to Ss. Order of presentation can readily be varied. As a result these tests, while eliciting certain Rorschach-like responses, lend themselves to more experimental studies of projective theory than does the Rorschach proper. However, because of the demonstrable relations between these tests, any findings resulting from experimental studies of these tests can be related back to the standard Rorschach procedure.

Whether the operational measures presented here will ultimately have clinical usefulness or not, the primary value of this study lies in the methodology involved. Summarized briefly, this method holds that operational variables based on a group's responses to projective tests can be used as measures of assessing individual performances and as a means of characterizing the test structure. In addition, the development of experimental projective devices similar to the Rorschach but whose test elements lend themselves to more possible variations of presentation allows for more adequate validation studies of projective tests and should, in turn, allow for more adequate formulation of projective theory.

SUMMARY

An operationally-defined approach was used here to investigate which aspects of verbal responses to a series of different projective tests are consistent. It was argued that an empirical series of defined measures which could be shown to be consistent was needed. Hence the verbal responses of 48 female Ss to four different projective tests were measured in terms of six operationally-defined variables in this study. Analysis of data revealed that the Ss responded consistently over the wide range of visual test material presented them (i.e., inkblots, photographs, and small concrete objects) in terms of how they perceived. They also were consistent in terms of Percept Variation scores which indicated that they tended to select stimuli containing the same range of content. If an S selected stimuli on one test which evoked a narrow range of percepts he would do likewise on the other tests.

To a lesser degree and between fewer test situations the Ss were somewhat consistent in terms of (1) the Selection Variable (based on the frequency with which the group responded to a given stimulus, (2) the Average Percept Variation Score (based on the average number of Ss giving the same percept to the same stimulus), (3) the Concept Variable (based on the percent of subjects giving the same basic percept to the same stimulus), and (4) the Content Agreement Total Score (a score representing the total number of times *other* Ss gave the same basic percept to the same stimulus as did the given S). The intra-test correlations of these variables were also presented and discussed.

The major methodological contribution presented here, it is felt, demonstrated the desirability of developing objective test measures which can both assess the nature of the stimuli in the test and yet also characterize the performance of the individual Ss responding to the test materials. This method is based on a fusion of certain phenomenological and positivistic constructs and also along lines suggested by the theoretical contributions of Brunswik.

Further utilization of this method, it is held, will provide some solutions to those problems of projective test validation which have thus far been beyond experimental study.

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Physiologic Response, Perceptual Threshold, and Rorschach Test Anxiety Indices.[1]

M. Sam Rabinovitch, Ph.D.
Department of Psychology, Children's Memorial Hospital, Montreal, Canada

There is considerable research indicating that galvanic skin response (GSR) and visual recognition thresholds are important techniques for the investigation of anxiety (3, 6, 7, 8, 9, 10, 12). McGinnies (8) has reported a study in which recognition thresholds combined with pre-recognition GSR changes were used as measures of anxiety. This study suggested the possibility that the combination of these two laboratory techniques could be utilized in an investigation of Rorschach test responses which are purported to reflect anxiety. Such investigation could provide evidence regarding the validity of certain aspects of Rorschach interpretation, and could also possibly be an approach to further analysis of the perceptual processes involved in the Rorschach test procedure.

Following this line of reasoning it was hypothesized that pre-recognition GSRs and visual recognition thresholds of stimuli associated with Rorschach test responses which reflect anxiety would be greater than those associated with responses that are not thought to reflect anxiety. The present study was designed to test this hypothesis; to discover whether, under appropriate experimental conditions, certain Rorschach test responses would be related to systematic changes in GSR and visual recognition thresholds.

[1] This article is based on a dissertation submitted to the Psychology Department of Purdue University in partial fulfillment of requirements for the degree of Doctor of Philosophy. The writer is indebted to Professor Lawrence M. Baker for advice and assistance, and to the staff of the Department of Psychiatry, Cincinnati General Hospital, for their cooperation and interest.

Method

The experimental approach used in the present study is a modification of that described by McGinnies (8). Visual recognition thresholds and GSRs were recorded for three types of tachistoscopically presented word stimuli, *anxiety* words, *non-anxiety* words, and *non-test* words. The first two types of stimuli were taken directly from each Rorschach test protocol and were unique for each subject. The third stimulus type, *non-test* words, was taken from an independent source and was not unique to the individual subject.

Beck (1, 2), and Klopfer and Kelley (5) indicate various characteristic Rorschach responses which they have found to be associated with anxiety. Four of these general response categories lent themselves to the design of the present study, strong use of color (CF, C), strong use of shading (YF, Y, or C' F, C'), use of three dimensionality (V or FK), and use of texture (T or c). These four categories served as criteria for *anxiety* responses in this study. A scoring of Popular (P) or good form (F+) was the criterion used to select *non-anxiety* responses. The *non-test* words were chosen from among the 1000 most commonly seen words listed in Thorndike's *Teachers Word Book* (13).

Subjects

The subjects used in this study were eleven patients, five males and

TABLE I—Characteristics of Subjects

Subject	Sex	Age	Marital Status	Education	Diagnosis
1	male	44	married	elementary	anxiety neurosis
2	female	26	single	elementary	schizophrenia
3	male	51	married	high school	character disorder with addiction
4	female	35	separated	high school	anxiety neurosis
5	male	24	married	college	anxiety neurosis
6	female	35	married	elementary	schizophrenia
7	female	45	married	high school	schizophrenia
8	female	17	single	elementary	manic-depressive psychosis
9	male	40	married	college	anxiety neurosis
10	female	22	single	elementary	manic-depressive psychosis
11	male	25	married	elementary	schizophrenia

six females, from the psychiatric ward of a large general hospital. These patients were selected by ward psychiatrists according to four explicit criteria, a. subject had at least normal vision, without corrective devices, b. subject could read, write, and speak English fluently, c. subject was reasonably cooperative, and d. subject had never seen the Rorschach test.

The psychiatrists involved knew nothing about the nature of the study. They simply gave the experimenter the names of patients who they felt fulfilled the stated criteria. Table I presents a summary of the characteristics of the subjects.

PROCEDURE

Each subject was administered the Rorschach test in the standard manner described by Beck (1). Following this the subject was told there would be a twenty or thirty minute delay before the examination continued. Books and magazines were provided the subject while the experimenter, in another room, scored the test protocol for those factors necessary to meet the criteria for *anxiety* and *non-anxiety* responses. In addition to these already stated criteria, there were two further practical considerations which guided the selection of stimulus words from test responses. First, the essential meaning of the response had to be expressed in one, or at most, two words. Second, no *anxiety* type stimulus could be used unless the same protocol yielded a *non-anxiety* stimulus of identical word length. By this procedure it became possible to use each subject as his own control.

When the appropriate stimulus words for the subject had been determined, slides were made of these words. These slides were then placed, randomly, into previously prepared *non-test* series of slides. These *non-test* series contained seven slides each for a variety of single word lengths and two word phrase lengths. They had been prepared, as stated above, from Thorndike's word lists before the actual experimenting with subjects began. Thus, when a subject's protocol had been scored and slides made of the appropriate stimulus words, these new slides were added to the *non-test* series which corresponded in word length. To illustrate: a subject whose test protocol yielded three *anxiety* stimuli of varying lengths would have three

matched *non-anxitey* stimuli and would be presented with three series of slides, one *anxiety*, one *non-anxiety*, and seven *non-test* stimuli in each series.

When the slide preparation procedure was completed the examiner returned to the subject. It was found that it took from twenty to thirty-five minutes to complete the scoring and slide-making. The subject was then brought into another room which was completely bare except for the following: a 5′ x 5′ movie screen on one wall, a chair facing the screen and placed ten feet from it, a table just behind the chair on which were placed a Wechsler Psychogalvanograph, a slide projector with a 2″ Ilex optical shutter attached to the lens, and a jar of electrolytic paste. The optical shutter arrangement allowed for exposures of .01, .02, .04, .10, .50, and 1.0 second duration.

After being connected into the GSR apparatus each subject was told that words were to be flashed on the screen, that each word, or group of words, would be flashed again and again until he, the subject, was able to report the correct word or words. When the subject was comfortably settled and when the GSR deflection readings had become stabilized at a zero point, a practice series of six slides were presented. The words on these slides, three with four letters, three with five letters, were taken from Thorndike's *Word Book* (13). Each slide was presented tachistoscopically, beginning with exposure durations of .01 seconds and going on to longer durations until the subject reported the correct word stimulus. The maximum psychogalvanograph deflection for a fifteen second period following each exposure was recorded, as was the exposure duration for the correct and final trial. Before each new exposure the psychogalvanograph was zeroed manually by the experimenter. The subject was alerted for each exposure and was told when a new slide was to be presented.

Upon completion of the practice series the experiment continued uninterrupted. The *anxiety*, *non-anxiety*, and *non-test* stimulus slides were presented in exactly the same manner as the practice series. The order of presentation was always shortest single words to longest single words, followed by shortest two word phrases to longest two word phrases.

RESULTS

Table II presents the results of the above experimental procedure. Before a statistical analysis of these results could be accomplished certain features of the data had to be considered.

The unique characteristics of each subject's Rorschach protocol determined the type and quantity

TABLE II—Mean Pre-Recognition GSR Deflections and Recognition Thresholds of the Three Types of Word Stimuli

	Non-anxiety stimuli N = 30	Non-test stimuli N = 108	Anxiety stimuli N = 35
GSR Deflections *	.090	.096	.206
Recognition threshold (in seconds)	.037	.052	.172

* The GSR deflections are recorded in terms of the units of the scaled observation meter used in the Wechsler Psychogalvanometer.

TABLE III—Mean Pre-Recognition GSR Deflections and Recognition Thresholds of the Three Types of Word Stimuli Based on Revised Data

	Non-anxiety stimuli N 27	Non-test stimuli N 108	Anxiety stimuli N 27
GSR Deflections *	.099	.086	.220
Recognition threshold (in seconds)	.037	.036	.151

* The GSR deflections are recorded in terms of the units of the scaled observation meter used in the Wechsler Psychogalvanometer.

TABLE IV—Analysis of Variance of Recognition Thresholds for the Three Types of Stimulus Words

Source of variation	df	SS	MS	F*
Between subjects	10	.39905	.03990	
Between stimulus lengths within subjects	16	.03126	.00195	
Between stimulus types	2	.29546	.14773	26.90**
Stimulus types x subjects	20	.10973	.00549	
Stimulus types x stimulus lengths within subjects	32	.79114	.02472	
Within cells	81	.19435	.00240	
Total	161	1.82099		

* Only the significant F test is entered in the table.

** Significant beyond the one per cent level of confidence.

TABLE V—Analysis of Variance of Pre-Recognition GSR Deflections for the Three Types of Stimulus Words

Source of variation	df	SS	MS	F*
Between subjects	10	.10242	.01024	
Between stimulus lengths within subjects	16	.03338	.00209	
Between stimulus types	2	.39188	.19594	36.83**
Stimulus types x subjects	20	.10634	.00532	
Stimulus types x stimulus lengths within subjects	32	.12315	.00385	
Within cells	81	4.59148	.05668	
Total	161	5.34865		

* Only the significant F test is entered in the table.

** Significant beyond the one per cent level of confidence.

of stimulus words presented to him. As was anticipated this resulted in some variability. In several cases a protocol yielded two *anxiety* stimuli of the same word length, but only one *non-anxiety* stimulus of that word length. Thus an examination of the Ns in Table II indicates that the mean score of each stimulus category was not contributed to equally by each subject. An appropriate statistical analysis, taking into account this variability factor, would be extremely complex and time-consuming. Consequently, another approach was used. By means of random extraction of data the results were reorganized so that every subject contributed the same number of times to the means of the three categories of stimuli. It was found, using this procedure, that fifteen per cent of the original *anxiety* and *non-anxiety* stimulus data had to be discarded, leaving 108 *non-test* obser-

vations, 27 *anxiety* and 27 *non-anxiety* observations. Table III presents the group means which obtain from the newly organized data. A comparison of these means with those in Table II indicates that no relationships have been altered. In both instances the GSRs and visual thresholds associated with the *anxiety* stimuli are considerably greater than those associated with the other two stimulus types. To test this apparent difference the revised raw data was subjected to an analysis of variance. Tables IV and V present the results of this analysis. The between stimulus types variance is significant beyond the one per cent level for both recognition thresholds and GSR deflections. The significance of the differences between the various pairs of means was then tested, by means of the t-ratio. This analysis showed that the mean GSR deflections and recognition thresholds for the *anxiety* stimulus words were significantly greater, beyond the one per cent level of confidence, than the means obtained for the *non-anxiety* or *non-test* stimulus words. There were no significant differences between the latter two stimulus types.

In the design of the present experiment the three types of word stimuli were selected according to the criteria set forth earlier. However, the work done by Howes and Solomon (4) and others, on the relationships between word frequency and visual duration thresholds prompts one to ask about what role word frequency played in the present experimental situation. It will be remembered that all the *non-test* stimulus words were selected from among the 1000 most frequently seen words listed in Thorndike's *Teachers Word Book* (13). The other stimulus words, *non-anxiety* and *anxiety*, were taken from the subject's Rorschach test responses and were not controlled for the frequency factor. Could the GSR and perceptual threshold differences obtained with the *anxiety* stimuli be predicted from a knowledge of the word frequency of these stimuli? The frequency factor for the *non-test* stimuli was controlled, and since there were no GSR and perceptual differences shown between *non-test* and *non-anxiety* words, it is felt that a comparison of the *anxiety* words with the *non-anxiety* words would throw light on the probable answer to this question. To accomplish this the frequency values of the words constituting the relevant stimuli were determined from the Thorndike and Lorge lists (14). These authors suggest groupings of word frequencies in approximate steps of 1000 and these groupings were used as the basis for assigning frequency values to the *anxiety* and *non-anxiety* words. Thus words assigned value AA are approximately the first 1000 for frequency, value A the second 1000, value 30-49 the third 1000, value 19-29 the fourth 1000, value 14-18 the fifth 1000, value 10-13 the sixth 1000, value 8-9 the seventh 1000, value 4-7 the eighth, ninth, and tenth 1000, value 1-3 beyond the tenth 1000. Figure 1 presents the distributions of the two types of stimulus words in relation to the frequency values. Using the actual distributions, and combining frequency intervals to conform to necessary assumptions, a Chi square test (11, p. 207), was carried out to examine the relationship between these two distributions. The resultant Chi square is 1.97, using three degrees of freedom, the P value is between .50 and .70. This is interpreted as inadequate evidence for rejecting the

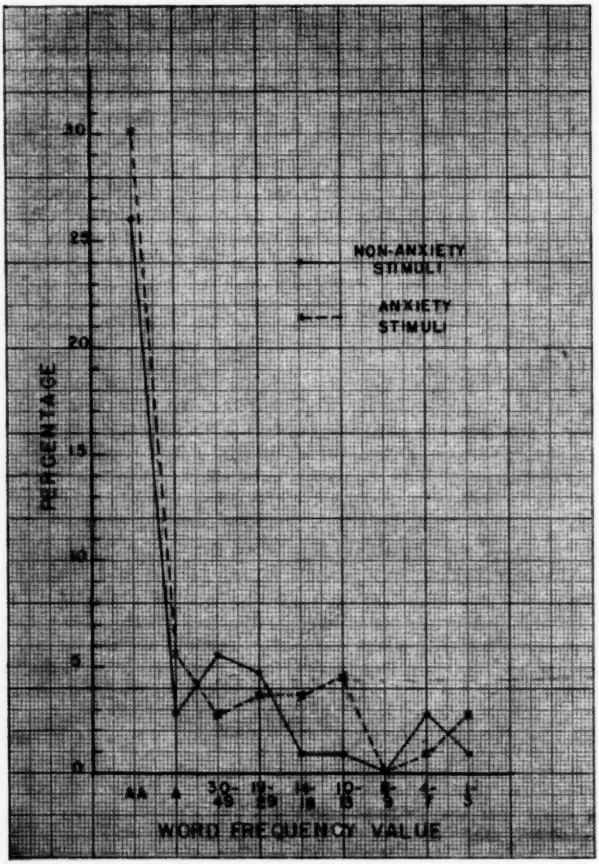

FIGURE 1 A comparison of the distributions of *non-anxiety* and *anxiety* word stimuli in relation to word frequency values. Total N is 107, 48 words used as *non-anxiety* stimuli, and 59 words as *anxiety* stimuli.

Null hypothesis and one must assume that from knowledge of word frequency alone one could not have predicted the results obtained in this study.

DISCUSSION

The significant differences in GSR deflections and perceptual thresholds obtained with the *anxiety* stimuli are interpreted as supporting the initial hypothesis. Thus, Rorschach test responses determined by strong use of color (CF, C), strong use of shading (YF, Y or C'F, C'), use of three dimensionality (V or FK), or strong use of texture (T or c), are

associated with greater GSR deflections and perceptual thresholds than Popular (P) or good form (F+) responses. To the extent that one is willing to accept the GSR and perceptual threshold techniques as measures related to personal anxiety, one can then say that the Rorschach determinants mentioned above are also related to personal anxiety.

Some important words of caution: The present study is restricted to the four types of Rorschach responses mentioned above and there are no logical or empirical implications in the results which would bear on other Rorschach indices of anxiety. Also important to remember is that the four response types used were restricted by the experimental design which required the use of only one or two word responses and which made it necessary to match each *anxiety* response with a comparable *non-anxiety* response. Still further restrictions which must be noted are the size and composition of the sample used in this study, eleven hospitalized mental patients.

It is tempting to fit the observations made in the present study into the theoretical framework described by McGinnies in his work on "perceptual defence," (8). One would say that McGinnies' "taboo" stimuli are equivalent to the *anxiety* stimuli and awareness of these *anxiety* words was delayed because of the association of unpleasant or undesirable emotions with these words, as was the case with the "taboo" words. However, there are pitfalls in this extension of the present data. McGinnies postulates, "Early in life, most individuals learn that words like 'whore' and 'bitch' are socially taboo. Since the use of such words by the child will generally result in chastisement by the parent, a conditioned emotional reaction to these verbal symbols is soon established." In the present study the subjects' verbal responses are elicited by Rorschach test cards, stimuli never seen before. The associations between certain aspects of these stimuli and emotional reactions become evident only in the experimental situation. There is no indication as to whether these are associations of long standing, as is presumably the case with "taboo" associations. In the present study there was no more than a thirty-five minute delay between completion of the Rorschach test and presentation of the word stimuli. It is not known whether the same results would have obtained if the delay were four hours or two days. It is also not known for certain whether the subjects had any recognition of their own responses, whether they somehow were aware of the difference between their various types of responses. The verbal reports given by the subjects on this question were confused and quite unreliable, although several actually said that "some of my bad answers were there." Much more data is needed before an adequate theoretical formulation can be made.

SUMMARY

Three types of word stimuli were tachistoscopically presented to eleven patients of a psychiatric ward while they were connected to a GSR apparatus. Two of the stimulus types, *anxiety* and *non-anxiety,* were determined by the subjects' own Rorschach test responses. The third type of word stimuli, *non-test,* were selected from lists of frequently seen words. The criteria for the *anxiety* stimuli are based on four categories of Rorschach test responses which are

purported to reflect personal anxiety.

It was hypothesized that the *anxiety* stimuli would be associated with greater GSR deflections and perceptual thresholds than the other two types of stimuli. The results confirm this hypothesis. The possible role of word frequency in the study was discussed and some implications for the theory of "perceptual defence" are considered.

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Special Problems of Testing Borderline Psychotics[1]

DAVID SHAPIRO, PH.D
Austen Riggs Center, Stockbridge, Massachusetts

Those who work in open sanitaria meet in general more than those associated with closed hospitals, with pathological conditions probably best described as borderline cases. In certain respects this category of pathology confronts us with difficulties since we are all more or less used to thinking in terms of the more familiar dichotomy of neurosis and psychosis. As a matter of fact, as Knight (2) has pointed out, there has been frequent opposition in the psychiatric and psychoanalytic literature to the term and the concept, "borderline", generally from the point of view that such a term is euphemistic, and that if a psychotic mechanism is present at all, it should be labeled definitely as such. Nevertheless, in recent years more and more attention has come to be focused specifically on diagnostic, dynamic, and therapeutic aspects of such cases.

To make a little more clear the kind of case referred to: These are patients who may, for example, have presented themselves for private office treatment with severe and apparently intractable neurotic symptoms, e.g., obsessive compulsive symptoms or hysterical symptoms; they may be patients considered neurotic and treated psychiatrically as neurotic until, after some time, indications of a psychotic process become manifest; they may be cases, also, which appear to be severe character disorders but where one sees after close or extended scrutiny clearly psychotic thinking from which, however, the patient may be able to take some distance; or they may be patients who present at first a picture of acute psychotic disruption, from which they are able to recover on their own to some extent.

The full picture presented by such patients brings home first of all, of course, the fact that when normal or neurotic ego functions are disrupted or are simply deficient, the disruption or the deficiency is not a complete one, may be very unstable, and is piecemeal. That is, certain ego functions are disrupted to a greater extent than others. This is of course nothing new. We have known it all along, no matter with what patients we work. Those who work with the most deteriorated schizophrenics are familiar, for example, with the striking changes in behavior which one sees in such patients when they leave their ward and attend a dance or a party given, let us say, by some volunteer group. On the other hand, those who work in private practice with "normal" neuroses and character disorders are familiar with the fact that among such patients as well, the intactness of reality testing may vary significantly in different areas. The scientist, for example, may be governed in his work by the strictest logic, but in his home life by grossly unrealistic attitudes.

It seems, however, that in cases of borderline psychosis these issues present themselves with peculiar clarity and present also some special difficulties. For here the dis-

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crepancies between various ego functions may be of an extreme kind. In addition, if we are to do justice to our own theoretical orientation and scientific exactness and, practically speaking, if we are to do justice to the patient in terms of prognosis, we are forced to make difficult judgments not simply in terms of whether a given patient is psychotic or not, or neurotic or not, but rather to what extent he is psychotic. The question becomes exactly how, and how much, the ego has been disrupted, and what are its chances for reconstitution. Once again, as Knight has pointed out, we are forced at least to a much more critical usage of three well-used frames of reference which, in some circumstances, may be satisfactory enough, but which if used uncritically may cause serious errors in work with the category of patients under discussion. These three frames of reference are 1. the question of whether, in a given patient, there has been a "break with reality," 2. the assumption that neurosis and psychosis are mutually exclusive, and 3. the idea that a given pathological condition must be understood in terms of regression to one or another particular libidinal stage. It seems clear that the borderline case is not susceptible to understanding from the point of view of any of these frames of reference. In general, from the point of view of the first frame of reference — break with reality — the picture of the borderline patient forces us to answer "yes and no." In relation to the second frame of reference, it must generally be said of the borderline patient that there are noteworthy neurotic features *and* noteworthy psychotic features, and with regard to the third frame of reference, defense mechanisms and libidinal expressions characteristic of many and sometimes all psycho-sexual stages are often conspicuous. The kind of problems one meets in diagnostic test interpretation in such cases can be seen, but perhaps the real importance of examining such problems is that they may clarify also essentially similar problems which do not appear so clearly, but which are nevertheless present, in the evaluation of any psychopathology.

In certain respects it seems that testing procedures have not altogether caught up with the clinical facts that have been mentioned. It appears to some extent that the resistance in the psychiatric world to such a concept as borderline psychosis is continued or repeated in the field of testing. For example, we still have some tendency to make diagnoses of psychosis or neurosis as though these were altogether mutually exclusive. Often, underlying such an approach is the tacit assumption that if there is *any* indication of autism in projective test material, a diagnosis of psychosis must be made. This is, of course, precisely analagous to the psychiatric objections to the "borderline" concept mentioned. In the same line there is a tendency to consider that those ego functions which *have* been well retained are really "screens" or "covers" for what is "*really* underneath." Another way of describing such a tendency is to imagine a psychologist, and this is exaggerated, proceeding in his examination of a Rorschach protocol through, let us say, five or six cards in which the picture seems primarily to be one of a hysterical neurosis, when he comes upon a gross confabulation. At this point, with a kind of "ah-hah" experience he feels he has been seen behind the screen, and seen that the patient is "basically" schizophrenic. The fact, of course, cannot be denied that a piece of autism such as is repre-

sented in a confabulation is of great importance. Yet to proceed on such a basis or on the basis of any "pathognomonic sign" to an *unqualified* diagnosis of schizophrenia, disregarding or minimizing the ego functions that remain intact may be to give an incorrect picture of the pathological condition and, for example, to imply a prognosis which may not be justified. Of course, no amount of preservation of some ego functions, whether that preservation appears in the Rorschach, or in a "clean" Wechsler-Bellevue, or a lucid TAT can be used to discount autistic material which does appear. But autistic material can be evaluated correctly only in the context of those preserved ego functions.

It should be emphasized that the imaginary psychologist who, after discovering autistic features in projective material, considers the non-autistic features of the test to be merely a screen or a cover for the essential psychosis, thereby commits a double error. For at the same time that the autism may be overestimated in this way, the remaining neurotic defensive functions, or even healthy adaptive functions may be underestimated, at times even ignored. Once again, with borderline cases such errors are particularly dangerous and do a special injustice to any prognostic evaluation.

Some examples of these points may be introduced by describing briefly the kinds of diagnostic discriminations which are commonly made at Riggs simply in order for our tests to have any value at all. Probably most of our patients give in their test productions one or more of what are considered to be schizophrenic signs. If a diagnosis of full schizophrenia were to be offered on every such case we would not only contribute little to the evaluation of these patients, but again and again we would run into flat contradiction in terms of their progress, the k i n d of material which emerges in their treatment, and their general behavior and clinically observed thought processes. Some of our diagnostic discriminations are as follows: psychotic character disorder, borderline psychotic character disorder, neurotic character disorder, or character disorder with borderline psychotic features of various degrees and kinds. It is evident that what we really have here is a continuum. Another continuum along which diagnostic discriminations are made deals with current pathology resulting from decompensation of previous character pathology. Thus we speak of a psychotic state, an incipient psychotic state, a borderline psychotic state, and again, a neurosis or a character disorder with borderline features.

The following are two rather extreme examples in that they are in one sense somewhat beyond the category of a borderline case—particularly is this so of the second case. Yet they are chosen because in both cases – the first a very intelligent 18-year-old *incipient* schizophrenic girl, the second a 45-year-old schizophrenic woman – certain important defensive and adaptive functions appear in the testing, notwithstanding the appearance of gross autism, and consequently there are in both features which make for a relatively good prognosis. Only certain specific aspects of the material will be presented to illustrate the issues under discussion:

The first case, Miss K. – 18 years old, IQ of 123 (V. 126, P. 112) and a suggested IQ of about 130 under optimal conditions, gave a Ror-

schach of 82 responses, of which incidentally more than one-half, 44, were M responses. Four full confabulations and three confabulatory tendencies appeared, in addition to 9 fabulations. One contamination also appeared. To illustrate — on the first card: After saying to the usual center area, "This is a man with his hands outstretched," then to the sexual side areas, "Two angels . . . in front of the man . . . wings outstretched . . . a conflict between the angels and the man who is evil, but they're just there— he is very active", she says, to the lower portion of the center area, "a male sex organ because this (whole center) is a man's figure."

As indicated above, such autistic responses were by no means confined to the first card. Yet, to quote from the test report, "there appears to be no significant blunting or inappropriateness of affect, concept formation is relatively intact, her general intellectual integration is adequate, her associations are not particularly loose, her TAT stories are relevant and without perceptual distortion, and her underlying negativism appears relatively well controlled." The confabulations in this patient's Rorschach appeared in a context of many realistic, sensitive, creative responses. There were indications in her test material of considerable remaining adaptive capacity — though this was generally of a compulsive kind of adaptivity — emphasizing duty, moral obligation, etc. She gave five FC's, although only three of them were good (F+). During the course of the testing she was quite cooperative, even making an appropriate joke at one point when the material became quite disturbing to her. This last point, emphasized by the fact that the tester found testing her to be a quite pleasant experience, is of considerable importance. It was very clear, from both the test content and much clinical material, that underneath her pleasant, obliging behavior, this young girl had tremendous potential for a passive, negativistic aggression. This potential has, as a matter of fact, been realized in relatively controlled form during succeeding months of treatment. But it was of great importance to recognize that, notwithstanding the obvious autistic inroads, this abundant infantile aggression was still being held in check. The compulsive kind of adaptivity, which had characterized much of her previous adjustment was, to a significant extent, holding fast; the neurotic defenses had by no means altogether given way to psychotic impulse expression. Our experience has taught us that even in better put together compulsive p e o p l e, underlying negativism breaking through the defense system can make the testing procedure an exhausting and generally miserable experience; this fact made the ease with which this patient was tested appear even more important. Her little joke on herself, made when the going was rough on her, was a socially adaptive piece of behavior — it nicely released some tension in her and in the examiner. One could say — though perhaps one shouldn't — that it would be at just such a point that in such a disturbed girl things might have gone just the *other* way — the underlying aggression might have erupted and made the situation very difficult, if not impossible. This difference is, of course, just one of those things which contribute to a correct evaluation of the autistic material described previously.

The second illustration — a 45-year-old psychotic woman — offers interesting material along the same line. In the setting of a masochistic

character, including also both hysterical and compulsive features and probably borderline psychotic reactions for some time past, this patient's psychotic manifestations at the time of testing, included perceptual distortions (on the TAT), many peculiar symbolic verbalizations, word contaminations, paranoid tendencies, etc. In a Rorschach of 51 responses she gave eight confabulations, and five confabulation tendencies. Several interesting examples of the autistic material in her Rorschach are the following: To an unusual area (in the boot) of Card IV is the response "the figure of Death . . . " – this grossly unrealistic response which turned out to be chiefly an association to some of the shading and certain curving lines in the card, is then elaborated in a confused and not understandable way. In Card II she saw "a feeling of conflict in the middle . . . probably my own feeling of beating my head against the wall." These samples are chosen from many and more serious indications of autistic thinking in order to give the flavor of an intensely masochistic depressive tone which ran throughout much of the material. At times, the depressive quality was denied with such phrases as "the happy ecstasy of joy" or such responses as "an orgasm in color" on card IX. On the TAT, however, the masochism appeared in such a form as the use of several cards to describe – in a sort of continued story – every detail of the sudden death of her husband some 16 years before. This was accompanied by prolonged crying and sobbing. – all as though it had happened yesterday.

It will probably be surprising, and there is certainly no intention to put a halo over the head of the tester, that in certain respects this testing, too, was rather pleasant. Why? Because notwithstanding all that has been described, this woman went through the test battery fairly quickly, and without much difficulty aside from the tears, and above all, she turned out to have an excellent sense of humor. She, too, was at times able to relieve tense moments with little jokes. It will certainly not be surprising that she herself was the butt of these jokes. One could sense in that fact a derivative of the masochism referred to. But the important thing was *not* that these jokes were masochistically flavored; it was rather that she could rise to such socially adaptive behavior as appropriate joking.

This aspect of her self-image is discernible within the Rorschach protocol itself, in certain imagery that appears there: In Card I, "one of those pictures of Mehitabel with a sort of cockeyed leer"; in Card II, "a Walt Disney character . . . Dopey . . . an expression I apply to myself frequently." In Card II, "a grinning Cheshire cat"; in V, "Punch and Judy locked in an embrace . . . with funny hats . . . Oh, dear, I suppose I should tell you I'm queer for hats – I have a big collection"; in Card IX, "clowns"; in Card X, "cartoon characters, faces . . . and they're going yakity, yakity, yakity."

Reference should be made at this point to Brenman's (1) paper, "On Teasing and Being Teased: and the Problem of Moral Masochism," in which she discusses not only the unconscious drives which go into masochism, but also the fact that "when the synthesizing or creative functions of the ego are operating reasonably well, the masochistic character will be able to express and modulate his primitive drives via the many adaptive functions of the ego." In this patient, the rage, the bitter masochism which at

times reached psychotic proportions and took on an accusing paranoid flavor, was yet susceptible to modulation and expression in good, adaptive humor. Both the creative, integrative aspects of her functioning and the unintegrated, aspects w h e r e the creative ego fails are, as I have tried to indicate, v i s i b l e in the Rorschach material. Once again, it should be said that the autistic material cannot be fully evaluated without reference also to the retention of some of these adaptive functions.

By way of rounding out the material, one other example may be mentioned: In one case of a 29-year-old man diagnosed as a "borderline psychotic paranoid character," the response was given on Card IV of a "giant . . . with an aperture at the head . . . sprewing forth whatever poison . . . (here his voice trailed off)." When asked about this "sprewing forth," he at once indicated that he had not actually seen this — it just derived from the general "impression of somberness." I certainly do not mean to imply that we should make a diagnosis on the basis of one response, but I offer this response as an example of how, throughout the record, responses that, so to speak, started out to be frankly psychotic were yet controlled. This degree of reality testing, admittedly weak and sometimes belated, was indicated at times in rather subtle verbalization, like "it gives the impression of" instead of "it is." Such features, together with a "clean" Wechsler-Bellevue and TAT moved us to consider the patient a borderline, rather than fully psychotic, character. Here again, it should be emphasized that it is not simply the existence of autism, but the way of handling it that may be of crucial importance. Lending support to this patient's capacity to take some distance from his undoubted autistic tendencies. i.e., to the fact that such tendencies remained by and large ego-alien — were many indications of ego-syntonic and fairly well maintained character traits of a snobbish, rather sadistic kind — strong outposts, in other words, of non-psychotic character adjustment.

Along the line of this orientation, some needs and possible directions of research suggest themselves. It would seem that one of the greatest problems which confronts us in doing justice to the evaluation of autistic features, particularly in such cases as have been discussed, is the deficiency of our tools for refined examination quantitatively and qualitatively of autonomous ego functions, that is, those ego functions which are relatively more resistant to intrusion from and disruption by a psychotic process. Certain tools, of course, we have and we are used to using them. One of the principal reasons for preferring a battery of tests, for example, to the use of the Rorschach alone, is that a battery will give us a wider sampling of such functions. We know also, for instance, that the functions required for performance on the Wechsler-Bellevue are in general more resistant to autistic inroads than those which manifest themselves in the Rorschach. Rapaport (3) has called these "quasi-stable" functions. We know furthermore that even on the Wechsler-Bellevue among the various sub-tests, certain functions are more resistant to such intrusion than others. Thus, for some years, psychologists have spoken of "hold" and "don't-hold" sub-tests on intelligence scales. Actually a double problem is presented. Certain functions — that is, functions tapped by certain subtests of an intelligence scale —

"hold up" better in the face of autistic inroads *within* specified *groups*. This is, so to say, the interpersonal aspect. Then, too, for each individual case, certain functions, not necessarily identical with the group results, will hold up relatively well. Another way of describing this would be to say that within each individual case certain subtests will reflect functions which are relatively more autonomous than those reflected by other sub-tests.

The point essentially is that this kind of examination needs great refinement and extension. We know very little, for example, about the relative autonomy of various functions which would go into making up an individual Rorschach protocol. But there is no reason to doubt that there is such variation, that within a given Rorschach protocol there are represented functions which are relatively easily disrupted by autistic processes and other functions which are very resistant to such disruption. Here, too, there is the inter-personal issue – namely the investigation – necessarily including statistical investigation–of those aspects of the Rorschach protocol which, for a specified large group, are relatively resistant to autistic disruption. In the Rorschach, in this sense, as well as in the Wechsler, it would seem that we should be able to speak at the very least of hold and don't-hold aspects of a protocol. And within *each* Rorschach protocol there would be representations of relatively autonomous functions within an individual's specific makeup. Of course, part of our problem resides in the area of the general problems of Rorschach rationale. But perhaps research in this direction would make some contribution to those general problems.

In connection with the possibilities of such research – research into the question of which aspects of Rorschach performance would be relatively more autonomous, more resistant to autistic influences – one additional point might be mentioned. It would seem that one research procedure, namely the use of particular responses as, so to say, research units, may not in itself carry us very far. This can be illustrated by one possible research approach to this problem, which was to make some comparisons of popular responses in, for example, different Rorschachs on the same patient at times of different degrees of autistic influences, e.g., during the treatment of psychosis. The general idea was that the popular responses might represent some aspect of such more or less autonomous functions and might therefore, in certain cases remain the same, at least in number, before and after successful treatment. There was, however, a quick reminder of the fact that a response is by no means an elemental unit–that in fact it can remain the same in certain respects and change in other respects. The only clear and full discussion of this problem is that given by Schafer (4). He introduces the concept of "spread" within a single response, pointing out that in general a response cannot be located at a single point on a continuum from wish-thinking to reality-oriented thinking. Rather, in different respects, a single response may be spread through a range of this continuum. For example, the popular animal on VIII may be accurately perceived and described, but autistically elaborated motivations may then be ascribed to it. In certain respects, then, a single response may reflect some reality adaptiveness or adequate defensive structure and in other respects it may reflect real ego disruption.

In evaluating a particular response, therefore, one often must face essentially the same kind of problem as has been discussed in terms of evaluating a test or test battery as a whole. Namely, to decide, not whether a response reflects autism or reality adaption, but in what ways it reflects each.

I have been aware that in the two principal case illustrations I have relied too heavily on content and gone into the formal characteristics of the test material insufficiently, particularly in seeking to demonstrate adaptive functions in the test material. In part this relates to the kind of problem at hand. For the second research direction that seems indicated is further study of the ways in which adaptive functions do manifest themselves — particularly in the Rorschach. It would be hoped that such research would contribute not only to testing, but also to broader problems of ego psychology. One may think, for example, of how the Rorschach may throw light on the ways in which — in the case of masochism — otherwise destructive tendencies can be integrated into a most socially adaptive kind of behavior, e.g., humor. In the Rorschachs of certain cases, as I have tried to illustrate, this process takes place before our eyes. We see, particularly in some borderline cases, the ego disruption and emergence of autism and impulse, but yet with some clear residue of adaptability or ego-integrating capacity. Such interest might again take us to careful study of various adaptive functions in a single response, and to Schafer's concept of "spread" of a single response over a range in the autism — reality-adaptive thinking continuum.

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2. Knight, R. P. "Borderline States," *Bulletin of the Menninger Clinic,* 1953, *17,* 1-12.

3. Rapaport, D. "Projective Techniques and the Theory of Thinking," *Journal of Projective Techniques,* 1952, *16,* 269-275.

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ANNOUNCEMENTS

Fifteenth Annual Meeting of the Society For Projective Techniques

Hotels New Yorker and Statler, New York City, 1954

PROGRAM SUMMARY

EXHIBITS

Exhibits 19 & 20 Hotel Statler

PROJECTIVE TESTING IN TWO FIELD STUDIES

1. **American Museum of Natural History Admiralty Islands Expedition (1953-54).**
2. **Montserrat Anthropological Expedition (1953-54).**

Friday, September 3, 1954

8:40-10:40 **Symposium: Recent Developments in Projective Techniques For the Study of Delimited Aspects of Personality.**
(Co-sponsored with Division 12, APA)
North Ballroom, New Yorker

11:00- 1:00 **Symposium: Problems of Projective Methods in Studying Coping Patterns of Young Children.**
(Co-sponsored with Division 12, APA)
North Ballroom, New Yorker

1:30- 3:30 **Executive Committee Meeting.**
Parlor F, New Yorker

3:50- 5:50 **Business Meeting.**
Panel Room, New Yorker

Saturday, September 4, 1954

8:40-10:40 **Session of Contributed Papers: Projective Test Research on Normal Personality and Sex Differences.**
(Co-sponsored with Division 12, APA)
North Ballroom, New Yorker

11:00- 1:00 **Symposium: The Significance of the Interpersonal Relationship in the Projective Test Situation.**
(Co-sponsored with Division 12, APA)
North Ballroom, New Yorker

2:30- 4:30 **Case Conference Workshops.**
(Advance registration required since these are limited to small groups.)

A. Transvestitism in an Autistic Child.

B. Repeated Rorschach examinations on an Obsessive-Compulsive Adult Male in Psychotherapy.

C. A Troubled Family: Demonstration of Diagnostic and Therapeutic Planning at the Psychological Clinic of a University.

D. Patterns of Action in a Case of Obesity.
E. Frigidity in a Young Female Adult.
Central High School of Needle Trades,
225 West 24 Street

6:00- 7:00 **Social Hour.**
East Room, New Yorker

7:00 **Dinner and Presidential Address.**
East Room, New Yorker

PROGRAM COMMITTEE

JULES D. HOLZBERG, *Chairman*
MORTIMER M. MEYER L. JOSEPH STONE

LOCAL ARRANGEMENTS COMMITTEE

GERTRUDE G. BRODY, *Chairman*
SAMUEL BARON MILDRED R. BERNSTEIN

PROGRAM

EXHIBITS

Hotel Statler

Exhibits 19 & 20—Projective Testing in Two Field Studies

1. **American Museum of Natural History Admiralty Islands Expedition (1953-54).**
   MARGARET MEAD *(American Museum of Natural History)*, THEODORE SCHWARTZ AND LEONORE SCHWARTZ *(University of Pennsylvania)*
2. **Montserrat Anthropological Expedition (1953-54).**
   RHODA METRAUX *(Institute for Intercultural Studies)* AND THEODORA M. ABEL *(Postgraduate Center for Psychotherapy)*

Friday, September 3, 1954
8:40-10:40, North Ballroom, New Yorker

SYMPOSIUM: Recent Developments in Projective Techniques for the Study of Delimited Aspects of Personality.

(Co-sponsored with Division 12, APA)

L. JOSEPH STONE *(Vassar College), Chairman*

Participants:

BARBARA BIBER *(Bank Street School)*, Teacher Selection Test

JACOB LEVINE *(West Haven VA Hospital)*, Humor Test

HELEN D. SARGENT *(Menninger Foundation)*, Insight Test

ABRAHAM M. ZEICHNER *(Connecticut State Hospital)*, Aggression Test

Discussants:

MARGUERITE R. HERTZ *(Western Reserve University)*

PERCIVAL M. SYMONDS *(Columbia University)*

A recent trend in the field of projective testing has been the development of new projective techniques designed to study discrete aspects of personality as opposed to

the older techniques that were developed to study the "whole" personality. This movement has, in part, been stimulated by theoretical as well as practical considerations. On the theoretical level, the older projective techniques have been criticized for the absence of a systematic theoretical rationale underlying their construction. On the practical level, they have been too time-consuming and not actually yielding a picture of the "whole" personality. This symposium will consider four new projective techniques which are designed for the study of limited aspects of personality. Among the factors to be considered are those pertaining to the construction of each test (theoretical rationale, reliability, validity, etc.) and their potential role as clinical and research techniques. There will be a discussion of how these newer techniques compare with the more "global" projective methods.

11:00-1:00, North Ballroom, New Yorker

SYMPOSIUM: Problems of Projective Methods in Studying Coping Patterns of Young Children.

(Co-sponsored with Division 12, APA)

SYBILLE K. ESCALONA *(Yale University), Chairman*

Participants:

LOIS B. MURPHY, WALTER KASS AND GRACE M. HEIDER, *(Menninger Foundation)*

Discussants:

WILLIAM GOLDFARB *(Henry Ittleson Center for Child Research)*

R. NEVITT SANFORD *(Vassar College)*

Personality development in a group of children 2 to 6 years of age, originally studied as healthy, well developing infants by Escalona and Leitch, with the collaboration of Heider and others, is now being followed by means of interviews with the parents, observations in the home, medical and psychiatric studies, projective tests and other formal and informal methods. The focus of the investigation is analysis of young children's ways of coping with their own feelings and impulses in day to day reality situations as well as in the special tasks of test situations.

Digests of the material on two cases presented for discussion will be pointed toward: 1) the special problems of projective methods in research with young children; 2) problems of adequately identifying the child's repertoire of coping maneuvers and variations in their emergence and constellations; 3) problems of sorting out projections of the more persistent coping patterns from the child's transient expedients; 4) problems of interpretation from content; 5) differing responses by the same child to projective test situations differently structured; 6) evaluating inferences about the child from projective methods in terms of the more enduring aspects of his home environment and characteristics of the principal figures in his life.

1:30-3:30, Parlor F, New Yorker

Executive Committee Meeting

3:50-5:50, Panel Room, New Yorker

Business Meeting

Saturday, September 4, 1954

8:40-10:40, North Ballroom, New Yorker

Projective Test Research on Normal Personality and Sex Differences.
(Co-sponsored with Division 12, APA)

BRUNO KLOPFER *(University of California at Los Angeles), Chairman*

8:40

Sex Differences in Figure Drawings by Normal Late-Adolescents.

HERMAN J. P. SCHUBERT *(Buffalo V.A. Hospital,)* AND MAXIE EARLE WAGNER *(State University of New York).*

Discussant: FRED BROWN *(Mt. Sinai Hospital)*

Problem: A study to establish figure-drawing norms for late-adolescents. *Subjects:* 1539 late adolescents consisting of 596 non-college-going high school seniors, 252 high-school-senior nurse-applicants, and 691 college freshmen. The non-college seniors included 378 males and 218 females; the nurse-applicants were all females; and the college freshmen included 195 males and 496 females. Of the college males, 68 were in art education, 64 in elementary education and 63 in industrial arts; of the college females, 104 were in art education, 325 in elementary education, and 67 in home economics. *Procedure:* The subjects, in groups, were each given a blank sheet of paper and a soft pencil and instructed to draw a complete person. As each finished, he was asked to write his name and mark the drawing with "1." He was then given a second sheet and asked to draw a person of the sex opposite to that first drawn. *Results and Conclusions:* Because of time limitations, only a general summary of findings will be presented.

9:00

A Statistical Study of Sex Differences on the Rorschach.

STANTON B. FELZER *(Temple University).*

Discussant: ROBERT R. HOLT *(New York University).*

Problem: The statistical analysis included: (1) Analysis of personality differences between college males and college females as revealed by the Rorschach. (2) Analysis of personality differences of subjects separated according to an external masculinity - femininity score—the Guilford - Zimmerman M-F scale. This analysis was made on the following four groups: (a) masculine males (b) non-masculine males (c) feminine females (d) non-feminine females. *Subjects:* The population (100 males and 100 females) was restricted to undergraduate students of Temple University, equated with respect to intelligence (A.C.E. Psychological Examination) and chronological age. *Procedure:* Rorschach tests were administered and scored by the author in accordance with Klopfer and Kelley, excluding testing of limits. The Guilford-Zimmerman was administered after the Rorschach. Differences between groups (using chi square) were determined for each of the following: (a) location areas (b) determinants (c) summary scores (R, T, T/R, sum C) (d) ratios (M : sum C, M:FM, F%). *Results:* (1) Of the 26 Rorschach variables studied, only two showed significant sex differences. (2) Females used significantly more FC than males. (3) Males took significantly more time per response. (4) Females showed a tendency toward a greater usage

of popular responses. (5) Juniors and seniors used significantly more FC than freshmen. (6) No significant differences between the sexes in the use of the above ratios. (7) In total population there was significantly greater use of FM over M. (8) Division of the total population according to M-F score failed to point out any further differences.

9:20

Age and Intelligence Dimensions of the Normal Rorschach.

MILTON S. GURVITZ AND LEONARD D. FEINBERG *(Hillside Hospital and Adelphi College).*

Discussant: LOUISE BATES AMES *(Gesell Institute of Child Development).*

Problem: Are Rorschach values dependent upon the factors of age and intelligence? At present no norms exist within the limits of a "normal" adult population. *Subjects:* The Rorschach was administered to three age groups: 20-24, 35-39, and 50-54. At each age level, three intellectual levels were tapped: the superior (minimum IQ 130), the average (IQ 90-110), and the inferior (IQ below 80). For each age group, 50 cases were tested for the three intellectual levels, so that 150 cases were used at each age level and a total of 450 cases was amassed. All individuals tested were white and native-born. *Procedure:* On the basis of the Rorschach findings, tables were established for the basic Klopfer factors, central tendency, dispersion, and chi square comparisons. *Results:* Norms are presented for all the basic Rorschach factors including number of responses, movement, color, shading, manner of approach, and other usual Rorschach ratios. *Conclusions:* Norms presently in use are based upon the adult of superior intelligence. A Rorschach record is interpretable only in terms of the subject's age and intelligence, preliminary norms for which are presented.

9:40

Personality Dynamics of the Well-Adjusted College Student as Revealed by the Rorschach and Thematic Apperception Tests.

RACHEL D. COX *(Bryn Mawr College).*

Discussant: RUTH MUNROE.

Purpose: The study aimed to make a contribution to the development of a normative picture or standard of the normal (well-adjusted) student. *Method:* A threefold approach was developed as follows: (1) Psychological Evaluation: (a) Test of Scholastic Ability (b) Rorschach (c) Thematic Apperception Test. (2) Psychiatric Evaluation: Psychiatrists saw each student for six two-hour interviews over a period of six weeks. (3) Family Background and Dynamics: A study of the family was made through a long home visit running on the average for two and a half hours. *Findings:* (1) Certain characteristic features of the Rorschach psychogram and content of the Rorschach and Thematic Apperception Test appear to be consistent in this normal group. These features distinguish them from students of comparable academic ability who are showing manifest difficulties in adjustment or learning. (2) The findings of both tests suggest that there is within the so-called normal personality more tolerance for deviate dynamics than has sometimes been thought. (3) Indications from early follow-up concerning the adequacy of the criterion of "normal" suggest the suitability of the criterion.

10:00

An Approach to Fundamental Compatibility in Marital Couples through the Rorschach.

STEPHANIE DUDEK *(New York Medical School)* AND SOPHIE GOTTLIEB *(Post-Graduate School of Psychotherapy).*

Discussant: PAULINE G. VORHAUS *(New York V.A. Mental Hygiene Clinic).*

Problem: This is a preliminary approach, by means of the Rorschach method, to the problem of fundamental compatibility between marital couples, i.e., persons who choose each other to live together and relate to each other in a meaningful and reasonably permanent relationship. The definition of fundamental compatibility is as follows: Fundamental compatibility is the ability to understand, communicate with, and accept each other on the level of the least changeable aspects of one's personality, with the same degree of complexity. In Rorschach terms, this means compatibility between the M responses of each partner. *Subjects and Results:* The present research is a report on the M responses of 33 unhappily married couples, who, in spite of friction ranging from mild to severe, agreed to maintain their marriages. Analysis of M reveals a basic quantitative similarity in 24 of the 33 couples, i.e., only 27.2% show a discrepancy in the number of M to place them on different levels of psychic complexity. A control group of 21 persons, of the same general age and socio-economic level, chosen as a random sample of males and females, show a disagreement of 66.7%, i.e., only 7 out of 21 had quantitatively similar M. Qualitative analysis of 10 cases of the experimental group shows a basic similarity in quality of M, i.e., if one mate had predominantly passive M, the quality of the other mate's M was not significantly different. A secondary finding was that the number of W responses showed an even greater quantitative similarity in the records of married couples than M. Of the 33 cases, there was only 21.2% disagreement between number of W sufficient to indicate a different degree of drive or ambition. The control group showed a 62% disagreement.

10:20

Conclusions: BRUNO KLOPFER.

11:00-1:00, North Ballroom, New Yorker

SYMPOSIUM: The Significance of the Interpersonal Relationship in the Projective Test Situation.

(Co-sponsored with Division 12, APA.)

JULES D. HOLZBERG *(Connecticut State Hospital), Chairman*

Participants:

MAGDA B. ARNOLD *(Harvard University)* Jungian Theory

MORTON DEUTCH *(New York University)* Field Theory

E. H. PORTER *(Science Research Associates)* Client-Centered Theory

ROY SCHAFER *(Yale University)* Psychoanalytic Theory

Discussants:

SAMUEL J. BECK *(University of Chicago)*

MAX L. HUTT *(University of Michigan)*

Rapport between examiner and subject in a testing situation has long been considered of importance in determining whether a

patient's performance on a test was to be considered representative of his true functioning. Rapport has usually been evaluated in terms of such factors as the patient's attention and cooperation, with the assumption that if the patient was attentive and cooperative, his functioning on the test could be considered representative. More recently, research has suggested that rapport defined in such terms may be optimal and yet a subject's performance on a test may still be affected by subtle variables operating in the test situation, not least of which was the nature of the interpersonal relationship between examiner and patient. Such an orientation views test performance influenced by such variables as throwing light on the nature of a subject's interpersonal relationships. This symposium will consider the significance of the interpersonal relationship in the projective testing situation in terms of the factors determining this relationship from the points of view of four representative theories of psychology.

2:30-4:30 Central High School of Needle Trades
225 West 24 Street

CASE CONFERENCE WORKSHOPS

(Advance registration required since these are limited to small groups.)

Case Conference Workshop A: Transvestitism in an Autistic Child.
(Kings County Hospital.)

SOLOMON MACHOVER, *Chairman*
Presentation: ROCHELLE M. WEXLER
Discussant: KAREN MACHOVER

A seven year old boy had been in the hospital for two different periods of observation, following panic reactions in which his behavior was disorganized and phobic. The child's major difficulty involved instances of wearing, hiding, and denying taking his sister's clothing. Psychological tests were administered during his first admission, and were repeated two months later during the second admission, affording an opportunity to study the significant changes which occurred in the personality during this period.

Case Conference Workshop B: Repeated Rorschach Examinations on an Obsessive-Compulsive Adult Male in Psychotherapy.
(Los Angeles VA Mental Hygiene Clinic.)

MORTIMER M. MEYER, *Chairman*
Presentation: NORMAN L. FARBEROW
Discussant: SAMUEL B. KUTASH *(East Orange V.A. Hospital)*

A series of four Rorschachs was administered over a period of seven years to an adult male patient seen intermittently in psychotherapy for obsessive-compulsive complaints. The first and last of this series will be considered in relation to the changes in the patient as noted in the therapeutic process. Information on the other two Rorschachs will be available.

Case Conference Workshop C: A Troubled Family: Demonstration of Diagnostic and Therapeutic Planning at the Psychological Clinic of a University. (University of Michigan)

FREDERICK WYATT, *Chairman*

Presentation: ZANWIL SPERBER, PEARL AXELROD, JUSTIN WEISS AND STANLEY SCHNEIDER

Discussant: W. MASON MATHEWS *(Merrill-Palmer School)*

The purpose of this conference is to show: (1) Planning in a psychological clinic for readjustive services in the instance of a family with troubles within the normal range of life and growth problems; (2) diagnostic study of a 6 year old boy, the primary client, involving the interpretation and use of psychological tests; (3) the process of diagnostic and therapeutic understanding which led to comprehending the boy's conduct problems in terms of the family orbit; (4) g u i d a n c e relationship to mother and father and changes in the foci of disturbance and of consideration of need for help and resistance against change in the family group as a whole.

Case Conference Workshop D: Patterns of Action in a Case of Obesity. (New York Hospital)

ARTHUR WEIDER, *Chairman*

Presentation: ALBERT J. STUNKARD AND NATHAN STOCKHAMER

Discussant: HILDE BRUCH *(Columbia Presbyterian Medical Center)*

The patient is a 41 year old single woman secretary who has spent most of the last two years in hospitals for treatment of cardiac failure on the basis of hypertensive disease and massive obesity. Although the patient has been overweight since adolescence, her main weight gain occurred during a period between ages 30 and 37. Hypertension was first diagnosed at the age of 34, and thereafter she received both general medical and psychiatric treatment with little benefit until cardiac failure became so severe that hospitalization was necessary.

Case Conference Workshop E: Frigidity in a Young Female Adult. (Postgraduate Center for Psychotherapy.)

THEODORA M. ABEL, *Chairman*

Presentation: MARVIN L. ARONSON AND GERTRUDE BONDEL

Discussant: ZYGMUNT PIOTROWSKI *(New York State Department of Mental Hygiene)*

This is a case of a 25 year old female patient who came into treatment with the complaint of vaginismus. The patient was seen on a twice-weekly basis in intensive analytically - oriented psychotherapy with reconstructive goals. Considerable emphasis was placed on the analysis of her dreams. At the outset of treatment, the patient was administered a battery of projective techniques, including the Rorschach, Thematic Apperception Test, Draw-A-Person, and Sentence Completion Tests. After approximately 130 sessions, the same battery was readministered to the patient.

6:00-7:00, East Room, New Yorker

Social Hour

7:00, East Room, New Yorker

Dinner and Presidential Address

SAMUEL B. KUTASH *(East Orange V. A. Hospital)*

The Impact of Projective Techniques on Basic Psychological Science.

MONOGRAPHS

No. 1—PROJECTIVE TECHNIQUES AND PSYCHOTHERAPY: Examination of a therapy process through the use of the Projective Motor Sequence and Rorschach Technique by William H. Lundin. This is a study in which the Rorschach was administered six times and the Projective Motor sequence three times during the course of intensive therapy (100 hours). The presentation includes a detailed description of the patient's behavior, the treatment situation, and interpretations and comparisons of the test results as they reflect the therapy process. Price $1.50.

No. 2—A MANUAL FOR THE MAKE-A-PICTURE-STORY (MAPS) METHOD: by Edwin Shneidman. This monograph is a manual which presents detailed instructions for the administration of the MAKE-A-PICTURE-STORY Method and suggestions for interpretation. It includes numerous illustrations, several protocols, and a detailed analysis of one case. Price $2.50.

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